RESEARCH REPORT

PERFORMANCE EVALUATION OF WATER REPELLENTS FOR ABOVE GRADE MASONRY

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PERFORMANCE EVALUATION OF WATER REPELLENTS FOR ABOVE GRADE MASONRY

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December 15, 1997

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ABSTRACT

Water penetration across brick masonry exterior walls is a problem which building owners and construction professionals must deal with frequently. Water repellents area often used in an attempt to resolve water penetration problems in certain remedial applications. Unfortunately the information available to building owners and construction professionals regarding the use and evaluation of water repellents is limited. Little practical information exists to assist in the selection of such products and in the evaluation of their performance and durability.

As part of a CMHC research project, Patenaude-Chiovitti Inc. carried out an evaluation of such products, exposing problems of performance evaluation of water repellents for above grade masonry.

Six series of tests were conducted using a modified ASTM E-514 procedure and water uptake tube methods to evaluate the performance of five commercially available masonry coatings. The results of the study have indicated substantial improvements in the resistance to water penetration upon application of these coatings to masonry wall assemblies.

The data accumulated during this study also revealed a trend indicating an increase in the rate of water penetration from the time of product application (i.e.; reduced repellency), necessitating product reapplication after a given time interval.

Readers are cautioned in the interpretation of the test data without additional information pertaining to the vapour diffusion characteristics of the applied products.

DISCLAIMER

This project was carried out with the assistance of a financial contribution from Canada Mortgage and Housing Corporation (CMHC) under the terms of the External Research Program. The views expressed are those of the authors and do not represent the official views of CMHC.

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EXECUTIVE SUMMARY

Water penetration across brick masonry exterior walls is a problem which building owners and construction professionals must deal with frequently. Sources of water leakage are often difficult to determine and are frequently a result of either poor workmanship, design and the quality or integrity of the brick masonry units and mortar joints, or a combination thereof.

Water repellents area often used in an attempt to resolve water penetration problems in certain remedial applications. Unfortunately the information available to building owners and construction professionals regarding the use and evaluation of water repellents is limited. Little practical information exists to assist in the selection of such products and in the evaluation of their performance and durability.

As part of a CMHC research project, Patenaude-Chiovitti Inc. carried out an evaluation of such products, exposing problems of performance evaluation of water repellents for above grade masonry. In order to evaluate the performance of water repellent products, a test procedure including a modified ASTM E-514 test procedure and water uptake tube tests were used to evaluate water penetration performance. In addition, air infiltration tests were also used to evaluate air leakage characteristics of masonry panel assemblies treated with masonry coatings. The evaluation of vapour diffusion performance is another very important aspect in the evaluation of water repellents, which is the focus of a separate study.

The research work had as primary objective to evaluate the performance of water repellents on a comparative basis and evaluate practical methods to evaluate their effectiveness in reducing water penetration.

Testing was carried out on six wall test specimens erected within a specifically designated exterior test chamber. The test chamber assembly was designed to create and maintain a static air pressure difference across the wall specimen. One side of the specimens was permanently exposed to natural meteorological conditions in order to evaluate the impact on performance after exposure.

Five different water repellents were applied, each on separate masonry test specimens with a sixth, untreated specimen serving as a control panel. Each of the five selected water repellents were specially intended for masonry applications and are identified by their generic classification as follows:

- 40% silane (solvent based)
- polysiloxane blend (solvent based)
- silane/polysiloxane blend (water based)
- siloxane/silane blend (water based)
- elastomeric waterproof coating

Six series of tests were conducted using the modified ASTM E-514 procedure and water uptake tube methods. The results of the study have indicated reductions in water penetration in the order of 34% to 99% upon application of commercially available masonry coatings.

Although the increased water repellency was generally confirmed by these two test methods, several factors were identified which could influence or bias test results. These factors included slight, normal occurring imperfections in the wall assembly, sample population, and nature of testing methods pertaining to size of test area and location. This bias was reflected in different results obtained between the modified ASTM E-514 procedure and water uptake tube method for the same panel assembly.

The data accumulated during this study also revealed a trend indicating an increase in the rate of water penetration from the time of product application (or decrease in repellency), necessitating product reapplication after a given time interval. Additional investigation is required to evaluate this phenomena although in some cases, it appears that the repellency may diminish significantly within two years of application.

Readers are cautioned in the interpretation of the test data without additional information pertaining to the vapour diffusion characteristics of the applied products.

RÉSUMÉ

L'infiltration de l'eau dans les murs de brique extérieurs constitue un problème avec lequel les propriétaires d'immeubles et les spécialistes de la construction doivent fréquemment composer. L'origine des infiltrations est souvent difficile à déterminer. Elles sont habituellement causées par une mauvaise exécution de l'ouvrage, une conception déficiente, des briques et des joints de mortier de qualité ou d'intégrité douteuse ou une combinaison de ces facteurs.

Les produits hydrofuges sont souvent utilisés dans l'espoir de régler un problème d'infiltration d'eau lors de certaines opérations de rattrapage. Malheureusement, l'information mise à la disposition des propriétaires d'immeubles et des spécialistes de la construction en matière d'utilisation et d'évaluation des hydrofuges est limitée. Il existe peu de renseignements pratiques pouvant contribuer au choix des produits et à l'évaluation de leur rendement et de leur durabilité.

Dans le cadre d'une recherche commandée par la SCHL, la firme Patenaude-Chiovitti Inc. a évalué des hydrofuges pour ouvrages de maçonnerie hors-sol et a fait état des problèmes inhérents à l'évaluation de leur rendement. Pour pouvoir évaluer le rendement des produits hydrofuges ainsi que l'efficacité de l'imperméabilisation, la firme a eu recours à une méthode d'essai constituée de la méthode ASTM E-514 modifiée et d'un procédé d'absorption d'eau faisant usage de tubes. En outre, des essais d'infiltration d'air ont servi à évaluer les caractéristiques de fuites d'air des panneaux de maçonnerie traités avec une membrane hydrofuge. L'évaluation du rendement au chapitre de la diffusion de la vapeur constitue un autre aspect très important de l'évaluation des hydrofuges et a fait l'objet d'une étude distincte.

Les travaux de recherche avaient comme principal objectif l'évaluation du rendement des produits hydrofuges, sur une base comparative, et l'évaluation des méthodes pratiques permettant de déterminer dans quelle mesure ils réussissent à réduire les infiltrations d'eau.

Les essais ont porté sur six panneaux muraux montés à l'intérieur d'une chambre d'essai extérieure spéciale. Cette chambre d'essai a été conçue pour créer et maintenir une différence de pression d'air statique sur toute la surface du panneau mural. Une face des panneaux était exposée en permanence aux conditions météorologiques naturelles pour en évaluer l'incidence sur le rendement après exposition.

Cinq hydrofuges différents ont été appliqués sur des panneaux d'essai séparés, le sixième panneau, non traité, servant de contrôle. Chacun des cinq hydrofuges choisis était conçu spécifiquement pour les ouvrages de maçonnerie. Ils sont identifiés selon leur classification générique, à savoir :

- silane à 40 % (à base de solvant)
- mélange de polysiloxane (à base de solvant)
- mélange de silane et de polysiloxane (à base d'eau)
- mélange de siloxane et de silane (à base d'eau)
- membrane élastomère hydrofuge

Six séries d'essais ont été réalisées à partir de la méthode modifiée ASTM E-514 et de la méthode à absorption d'eau utilisant des tubes. Les résultats de l'étude ont révélé que l'application des

hydrofuges à maçonnerie vendus dans le commerce permettait d'obtenir une réduction des infiltrations d'eau de l'ordre de 34 à 99 %.

Bien que l'imperméabilisation accrue ait généralement été confirmée par les deux méthodes d'essai, on a déterminé que plusieurs facteurs pouvaient influer sur les résultats ou les fausser. Ces facteurs sont les imperfections légères et normales des murs, l'échantillon ayant servi aux essais et la nature des méthodes d'essai relativement aux dimensions de la zone d'essai et à son emplacement. En effet, des résultats différents ont été obtenus pour un même panneau avec la méthode modifiée ASTM E-514 et la méthode à absorption d'eau utilisant des tubes.

Les données recueillies durant cette étude ont aussi révélé que le taux d'infiltration d'eau avait tendance à augmenter (ou l'imperméabilisation à diminuer) une fois le produit appliqué, nécessitant une nouvelle application du produit au bout d'un certain temps. Il faudra procéder à une étude complémentaire pour évaluer ce phénomène, quoique, dans certains cas, il semble que l'efficacité de l'imperméabilisation puisse diminuer considérablement dans les deux ans qui suivent l'application initiale.

Le lecteur doit se garder d'interpréter les résultats des essais sans avoir à sa disposition des données additionnelles sur les caractéristiques de diffusion de la vapeur des produits utilisés.

TABLE OF CONTENTS

ABSTRACT i

EXECUTIVE SUMMARY iv

1.0 INTRODUCTION 1

2.0 OBJECTIVES AND SCOPE OF WORK 2

3.0 PROJECT METHODOLOGY 2
- 3.1 Test Chamber 2
- 3.2 Sample Preparation 4
- 3.3 Choice of Water Repellents 5
- 3.4 Testing Methodology 6
  - 3.4.1 Modified ASTM E-514 Test Method 6
  - 3.4.2 Water Uptake Tube Test Method 9
  - 3.4.3 Air Infiltration Test 10

4.0 TEST RESULTS 11
- 4.1 Modified ASTM E-514 Test Method 11
- 4.2 Water Uptake Tube Test Method 15
- 4.3 Air Infiltration Tests 10

5.0 ANALYSIS OF RESULTS 18
- 5.1 Modified ASTM E-514 Testing 19
- 5.2 Water Uptake Tube Tests 22
- 5.3 Air Infiltration Testing 24

6.0 CONCLUSIONS AND RECOMMENDATIONS 25
- 6.1 Modified ASTM E-514 Test Method 25
- 6.2 Water Uptake Tube Test Method 26
- 6.3 Air Infiltration Tests 27

APPENDICES

A: TEST CHAMBER DESIGN CRITERIA
B: PROCEDURES FOR MODIFIED ASTM E-514 TEST METHOD
C: PROCEDURES FOR WATER UPTAKE TUBE TEST METHOD
D: PROCEDURES FOR AIR INFILTRATION TEST METHOD
E: FIGURES
F: PHOTOGRAPHS
G: MODIFIED ASTM E-514 TEST CURVES
H: MODIFIED ASTM E-514 EXPERIMENTAL DATA
I: WATER UPTAKE TUBE TEST CURVES
J: WATER UPTAKE TUBE TEST EXPERIMENTAL DATA
K: AIR TEST EXPERIMENTAL DATA
L: LOG OF TESTING ACTIVITIES
M: MONTHLY METEOROLOGICAL SUMMARIES

1.0 INTRODUCTION

Water penetration across brick masonry exterior walls is a problem which building owners and construction professionals must deal with frequently. Sources of water leakage are often difficult to determine and are frequently a result of poor workmanship, design and the quality or integrity of the brick masonry units and mortar joints. Water repellents are often used in an attempt to resolve water penetration problems in certain remedial applications. Water repellents can be effective in reducing water infiltration in certain applications, if applied after proper diagnosis of the underlying problem and ensuring that the wall is properly maintained. It is important however to remember that the application of a water repellent is not a miracle remedy for water penetration problems and proper selection of an appropriate water repellent to meet a project's particular needs is essential to ensure proper performance.

Unfortunately, the information available to building owners and construction professionals regarding the use and evaluation of water repellents is limited. Little practical information exists to assist in the selection of such products and in the evaluation of their performance and durability. The research project presented in this report exposes the problem of performance evaluation of water repellents for above grade masonry.

In order to address these concerns, three test procedures were used for purposes of evaluating water repellant performance. These tests included a modified ASTM E-514 test procedure and a water uptake tube tests, to evaluate water penetration performance and air infiltration tests to evaluate air leakage characteristics of panel assemblies.

Another aspect in the evaluation of water repellents, not covered by this study, is vapour diffusion performance. This important characteristic should also be considered in the selection of a water repellant and is currently being investigated under a separate mandate.

2.0 OBJECTIVES AND SCOPE OF WORK

The primary objectives of the research work is to independently evaluate the performance of various water repellents on a comparative basis and develop practical methods to evaluate their effectiveness in reducing water penetration. In addition, the intent is to monitor short and long term performance of repellents after exposure.

Testing was carried out on six brick wall test specimens erected under field conditions, within a specially designed exterior test chamber assembly. The test chamber assembly was designed to create and maintain a differential static air pressure across the wall specimens. The front side of the specimens are permanently exposed to natural meteorological conditions in order to be able to evaluate impact on performance after exposure. Five different water repellent products were applied, each on separate test specimens with the sixth untreated specimen serving as the control panel.

3.0 PROJECT METHODOLOGY

A specially designed test chamber was built and six brick wall specimens were erected and treated with different water repellents, for comparative testing. The test chamber and specimens were constructed outside and positioned so that the specimens maintained a permanent southern exposure. A series of different tests were undertaken between the months of May to November 1996. Refer to appendix M for monthly meteorological summaries for this test period. The following is a description of the test chamber, sample preparation, choice of water repellents and testing methodologies and procedures.

3.1 Test Chamber

A test chamber capable of receiving a total of six brick wall specimens measuring approximately 1.57 m in height by 1.42 m in width each, was constructed for exterior laboratory testing. Refer to figure E.1 and photographs no.1 through 4 in appendices E and F, respectfully. The test chamber design criteria included the following considerations. Refer to appendix A for a detailed description of the criteria.

- *Sample size*
- *Air pressure*
- *Exterior exposure*
- *Handling of samples*
- *Access to wall samples*
- *Water collection*
- *Flexibility*
- *Working area*
- *Stability*

Although ASTM E-514 provides specific guidelines for a water penetration test chamber system, this system does not address all of the primary criteria previously outlined for this project. In order to be able to address all of these criteria, a custom designed test chamber was constructed. The test chamber was constructed of steel and wood framing, plywood sheathing and metal cladding. The test chamber measured a total of approximately 9750 mm in length by 3050 mm height and 1520 mm in depth. The framing for the wall samples consists of 50.8 mm x 203.2 mm hollow steel tubes. The roof, walls and raised floor of the chamber were constructed of 38 mm x 89 mm and 38mm x 140 mm wood framing, and 19mm plywood. The exterior walls and roof of the chamber were clad with 13mm particle board and metal cladding. The entire chamber was constructed upon a concrete slab on grade.

Particular attention to air tightness of the chamber was taken into consideration (i.e. in order to maintain a minimum differential air pressure of 500 Pa). All panel joints were sealed from the interior of the chamber and special care was taken to ensure a continuous air seal. A full size access door with a view window on the side of the chamber was provided for access. The door was designed with airtight gaskets and pressure clamps to assure airtightness. A permanent spot light was installed above each of the interior sides of the samples to facilitate observations. Each of the samples was equipped with individual water collectors. A drainage outlet to evacuate collected water (once measured), electrical outlets, and an exterior pressure reference were also incorporated within the chamber.

3.2 Sample Preparation

The brick wall samples were erected by professional masons. Standard clay brick with nominal dimensions 230 mm x 70 mm x 88 mm and pre-mixed mortar were used to construct the samples. The samples were erected over a consecutive two day period under conditions similar to normal site conditions and in accordance with methods of good building practice. Particular attention was taken to ensure a certain consistency in the laying of the bricks and mortar preparation. Refer to photographs no. 5 through 12.

The samples consisted of 20 rows and 6 lengths of brick in width each, with 10 mm concave tooled mortar joints, for a total dimension of 15875 mm in height by 14288 mm in width. The samples were erected within the exterior test chamber steel framing with a 19 mm joint between the brick and steel frame on the top and both sides of the samples. The joints between the brick and steel framing were sealed with a polyurethane sealant to allow movement of the brick assembly as a result of thermal and moisture expansion and to prevent the development of stresses within the wall assembly which could result in cracking. Steel brackets were installed on the back side at the top and two edges of the panels for lateral support. No anchors were used to tie the wall to the steel framing.

The six wall samples were erected simultaneously, one row at a time. The first row of bricks was laid over a 19 mm mortar bed and a guide line was drawn from one end of the chamber to the other, in order to ensure proper alignment and spacing. Strips of 13 mm fibreboard were temporarily placed along the side and top inside faces of the steel framing in order to ensure a consistent joint width between the brick and steel frame. A metal flashing (photographs no. 7 and 8) was installed over the second row of brick in order to collect infiltration water from the back sides (i.e. within the test chamber) of the samples.

3.3 Choice of Water Repellents

A total of five water repellent manufacturers participated in this research project. The selection of manufacturers was based on the following criteria:

- Reputability
- Presence in the market place
- Commitment to product research and development
- Sound technical support
- Product selection
- Willingness to participate

After discussions with each of the participating manufacturers, a water repellent from their product line was selected. Each of the selected water repellents was specially developed for masonry applications.

The test panels was treated with a different product (with the exception of one of the six panels which remained untreated - control panel). Refer to photograph no. 13. Surface preparation by acid washing was not conducted in order to minimize potential effects on results. In order to protect the manufacturers' identity, each of the products are identified generically. Product identification per panel is as follows:

Panel A:	40% Silane (solvent based)
Panel B:	Polysiloxane blend (solvent based)
Panel C:	Silane/polysiloxane blend (water based)
Panel D:	Siloxane/silane blend (water based)
Panel E:	Elastomeric waterproof coating
Panel F:	Control Panel (no coating)

Refer to figure E.1 for the identification of test panel assemblies. The products were applied by their respective manufacturer in accordance with their written recommendations.

3.4 Testing Methodology

The evaluation of product performance comprised a modified ASTM E-514 water penetration test, a water uptake tube test and air infiltration tests. A description of the different test methods is presented in the following sub-sections.

3.4.1 Modified ASTM E-514 Test Method

The ASTM-E514 test procedure was developed for laboratory testing to evaluate water penetration and leakage through masonry. In order to simulate site conditions, modifications to the test chamber and procedures were undertaken. These major modifications included:

- Pressure chamber located on the back side of the specimen.
- Capacity of six test specimens within the same chamber.
- Possibility of testing up to six test specimens simultaneously.
- Direct access to both sides of the test specimens during testing.
- Testing carried out under field conditions.
- Specimens permanently exposed to natural meteorological conditions.

The test pressures, rate of application of water, test duration, spray pipe and size of test wall specifications, as described in the ASTM E-514 test procedures, remained unchanged. These requirements can be summarized as follows:

-	Test pressure:	500 Pa
-	Rate of water application:	138 l/hr per m^2 of wall
-	Test duration:	4 hours of continuous testing
-	Spray pipe:	19 mm diameter copper pipe with a single row of 1.0 mm diameter holes spaced 25 mm. apart.
-	Size of test walls:	Minimum 1.11 m^2 exposed to the test witha minimum height or length of specimen of 1219 mm.

Figures E.1 and E.2, shown on the following page for convenience, and photographs no. 14 through 20 illustrate the test setup and its various components.

In order to create and maintain a differential air pressure of 500 Pa across the chamber, two multi-stage centrifugal blowers with a 47 l/s capacity were used in parallel (photograph no. 19). A variable transformer with a 0-110 volt output was used for air flow adjustment. A digital differential micromanometer with a 0-2000 Pa range and a 1 Pa resolution was used to measure the pressure differential across the chamber (photograph no. 20). The rate of application from the municipal water supply was measured with a 0-1134 l/hr flowmeter .

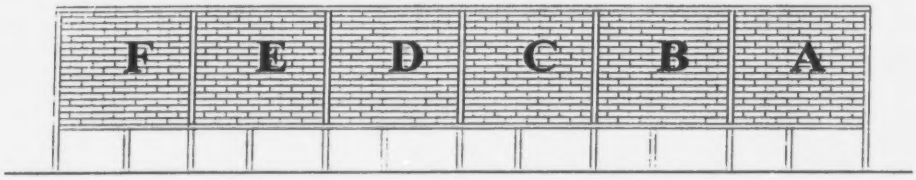

FIGURE E.1: IDENTIFICATION OF TEST PANEL ASSEMBLIES.

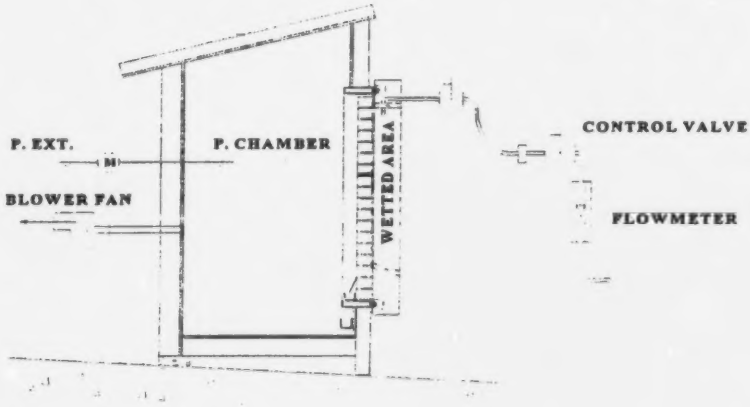

FIGURE E.2: MODIFIED ASTM E-514 TEST APPARATUS

Three interchangeable spray racks were built for simultaneous testing of up to three samples (photograph no. 17). The spray racks consisted of a 38 mm x 140 mm framing shroud with interior dimensions of 1092 mm (h) x 1041 mm (w), for a total test area of 1.13 m^2 (ref. figure A.3). Compressible dry closed cell foam gaskets were installed around the perimeter of the spray racks in order to create a water-tight seal between the spray rack and wall specimen. The bottom portion of the shroud and spray racks were sloped away from the wall specimen in order to shed run-off water. The shroud and spray rack assemblies fastened to the test chamber via steel angles permanently attached to the top and bottom of the racks and were bolted to threaded rods on the test chamber.

Tests were undertaken in accordance with the test procedures included in appendix B.

3.4.2 Water Uptake Tube Test Method

The testing apparatus consists of a pipe-like apparatus designed for measuring water uptake on vertical surfaces. Refer to figure E.4 and photograph no. 21. Several versions of the tube are available and vary in construction depending on supplier. Three of the most commonly available are the RILEM tube, MAT tube (Saversystems) and ProSoCo tube. The ProSoCo tube was arbitrarily chosen for use in the testing. A comparison of the three different versions can be summarized as follows:

	ProSoCo	Rilem	Mat
Water head	120 mm	98 mm	115 mm
Low pressure	276 Pa	276 Pa	414 Pa
High pressure	1172 Pa	965 Pa	1103 Pa

All three tubes are graduated in millilitres of water uptake. The ProSoCo tube is graduated from 0 to 5 ml with each graduation representing an increment of 0.5 ml. The falling head results in a variation in pressure from 1172 Pa when the tube is completely full to 276 Pa when the tube reaches the 5 ml uptake mark. These pressures correspond to the equivalent of wind speeds varying from 156 - 75 km/hr. The international union of testing and research laboratories for materials and structures or RILEM (Reunion Internationale des Laboratories d'Essais et de Recherches sur les Matériaux et les Constructions), with headquarters in Paris, developed the RILEM no. II.4 test method for measuring the quantity of water absorbed by the surface of a masonry material over a definite period of time. Refer to appendix B for the corresponding test procedure.

At most four readings were carried out per wall specimen; two readings at mortar joints and two readings on the face of the brick unit. Refer to figure E.5 for a generalized representation of the location of the water uptake tube tests.

3.4.3 Air Infiltration Test

Air infiltration tests were undertaken with a separate air chamber designed to fit on the interior side of the wall specimen and clamped to the chamber framing for testing of individual specimens. Refer to photograph no. 22.

The air chamber was constructed of 38 mm x 89 mm wood framing and polyvinyl film. Strips of self adhesive membrane were used to ensure an air-tight assembly. A combined air flow and pressure tap adaptor was fitted to the polyvinyl film of the air chamber for purposes of measuring air leakage rate and measurement of the pressure differential across the specimen (referenced to an exterior pressure tap). The air chamber was designed with dry closed cell foam seals and a quick-release clamping system to permit repeated use and to facilitate installation. Refer to figure E.6 for a schematic of the test set-up and to appendix C for a description of the apparatus and procedure corresponding to this test method.

4.0 TEST RESULTS

As summarized by the following table, the modified ASTM E-514, water uptake tube tests were undertaken between the months of May and November 1996. Furthermore, air infiltration tests were undertaken between the months of May and June 1996. The air tests were discontinued given the insignificant difference in the results measured for uncoated vs. coated panels.

	May 1996	June 1996	July 1996	September 1996	October 1996	November 1996
Modified ASTM E-514 test	Test no.1	Test no.2	Test no.3	Test no.4	Test no.5	Test no.6
Water uptake tube test	Test no.1	Test no.2	-	Test no.3	-	-
Air Infiltration test	Test no.1	Test no.2	-	-	-	-

The test results and data for each of these tests is presented in the following sub-sections.

4.1 Modified ASTM E-514 Test

A total of six tests were undertaken on each of the wall specimens A through F. Test no. 1 was undertaken on the bare wall specimens prior to the application of the water repellents. Test results are summarized below and presented in graphical format in appendix G. Refer to appendix H for the raw data which was collected during this series of tests. Tables no. 1 through 4 summarize initial, best, worst, and average performance results obtained upon completion of this series of tests. Table no. 5 presents an estimate of the rate of change in performance and reduction to water penetration over an extended time period. Finally, table no. 6 summarizes all of the results obtained in an attempt at classifying product/panel performance.

A summary of these initial results are presented in table no. 1 as follows.

Table no. 1: Summary of Initial Performance			
Test Panel	**Rate of Water Penetration (Prior to Coating) (ml/hr·m²)**	**Rate of Water Penetration (After Coating) (ml/hr·m²)**	**% Reduction**
A	5176	310	94.0
B	11472	8	99.9
C	11477	6416	44.1
D	12265	3981	67.5
E	6068	1601	73.6
F	9063	11833	(34.0)[1]

Note 1: This value is presented as an increase in the rate of water penetration

The following is a table summarizing the best performance of each of the masonry coatings and the test during which it was obtained (marked within parenthesis).

Table no. 2: Summary of Best Performance			
Test Panel	**Rate of Water Penetration (Prior to Coating) (ml/hr·m²)**	**Rate of Water Penetration (After Coating) (ml/hr·m²)**	**% Reduction**
A	5176	272 (3rd test)	94.7
B	11472	0 (4th test)	100.0
C	11477	14 (3rd test)	99.9
D	12265	3901 (4th test)	67.5
E	6068	1601 (2nd test)	73.6
F	9063	7719 (5th test)	14.8

The following is a table summarizing the worst performance of each of the masonry coatings and the test during which it was obtained (marked within parenthesis).

Table no. 3: Summary of Worst Performance

Test Panel	Rate of Water Penetration (Prior to Coating) (ml/hr)	Rate of Water Penetration (After Coating) (ml/hr)	% Reduction
A	5176	3169 (6th test)	38.8
B	11472	189 (6th test)	98.3
C	11477	6416 (2nd test)	44.1
D	12265	10771 (3rd test)	12.1
E	6068	2601 (6th test)	56.1
F	9063	12684 (3rd test)	(39.9)[1]

Note 1: This value is presented as an increase in the rate of water penetration

The following is a table summarizing the average performance of the five tests for each of the masonry coatings.

Table no.4: Summary of Average Performance

Test Panel	Rate of Water Penetration (Prior to Coating) (ml/hr)	Rate of Water Penetration (After Coating) (ml/hr)	% Reduction
A	5176	1185	77.1
B	11472	82	99.3
C	11477	1827	84.1
D	12265	6188	49.5
E	6068	2145	64.6
F	9063	9952	9.8

As previously discussed, the respective rates of change in performance were also computed and are tabulated as follows.

Table no. 5: Estimated Rates of Change in Performance and Projected Reduction in Water Penetration

Item	Panel				
	A	B	C	D	E
Initial Performance (% of base panel - best fit est.)	100	100	100[2]	68	70
Performances: (% of base panel - best fit est.)					
@ 3 months following application	67.3	98.8	85.3	58.4	62.2
@ 6 months following application	34.6	97.6	70.6	48.8	54.4
Projected Performances: (% of base panel - best fit est.)					
@ 9 months following application	1.9	96.4	56.9	39.2	46.6
@ 1 year following application	-	95.2	41.2	29.6	38.8
@ 2 years following application	-	90.4	-	-	7.6
@ 3 years following application	-	85.6	-	-	-
Est. Rate of Change in Performance (% per month - 30 days)	-10.9	-0.4	-4.9	-3.2	-2.6

Note 2: This value is based on peak performance for panel "C" only.

For simplicity, a ranking system was adopted for the purpose of summarizing the results of the various criteria under consideration. A summary of this ranking is presented as follows.

Table no. 6: Performance Evaluation Following Modified ASTM E-514 Testing

Item	Panel Performance Level		
	High	**Moderate**	**Low**
Water Penetration:			
Initial Performance	A,B	D,E	C
Best Performance	A,B,C	D,E	
Worst Performance	B	E	A,C,D
Average Performance	B,C	A,E	D
Durability:	B	C,D,E	A

4.2 Water Uptake Tube Tests

A total of three tests were undertaken on each of the wall specimens A through F. Tests were undertaken on both mortar joints and the brick face of each of the panel assemblies.

Test results are summarized below and presented in graphical format in appendix I. Refer to appendix J for the raw data collected during the course of these tests.

The following table is a summary of the performance of uncoated panel assemblies, as evaluated at mortar joints and brick face of the panel assemblies.

Table no. 7: Summary of Performance Water Uptake Tube Tests for Uncoated Panels

Test Location	Rate of Water Penetration at Mortar Joints ($l/hr \cdot m^2$)	Rate of Water Penetration at Brick Face ($l/hr \cdot m^2$)
A	240.4 (1)	41.1 (3) 44.0 (4)
B	180.2 (1) 158.1 (2)	70.5 (3) 29.9 (4)
C	718.5 (2)	23.6 (3) 14.9 (4)
D	347.3 (2)	28.7 (3) 35.2 (4)
E	646.6 (2)	40.5 (3) 86.5 (4)
F	273.0 (1)	49.1 (3) 49.7 (4)
Average	366.3	42.8

Table no. 8 summarizes the results obtained for the performance evaluation of the rate of water penetration between coated and uncoated panel assemblies as determined at mortar joints.

Table no. 8: Summary of Performance Water Uptake Tube Tests on Mortar Joints			
Test Location	Rate of Water Penetration (Prior to Coating) (l/hr·m²)	Rate of Water Penetration (After Coating) (l/hr·m²)	% Reduction
A1	240.4	81.7 - 158.1	34.1 to 66.0
B1	180.2	1.6 - 183.5	-1.8 to 99.0
B2	158.1	71.3 - 73.5	53.5 to 54.9
C2	718.5	109.8 - 225.5	68.6 to 84.7
D2	347.3	34.4 - 151.0	56.5 to 90.1
E2	646.6	2.0 - 10.8	98.3 to 99.7
F1	273.0	406.0 - 427.8	-48.7 to -56.7

The following table summarizes the results obtained for the performance evaluation of the rate of water penetration between coated and uncoated panel assemblies, as determined for tests conducted at the brick face.

Table no. 9 : Summary of Performance Water Uptake Tube Tests on Brick Face			
Test Location	Rate of Water Penetration (Prior to Coating) (ml/hr·m²)	Rate of Water Penetration (After Coating) (ml/hr·m²)	% Reduction
A3	41151	204 - 2648	93.6 to 99.5
A4	44003	204 - 2445	94.4 to 99.5
B3	70486	407 - 611	99.1 to 99.4
B4	29865	203 - 2241	92.5 to 99.3
C3	23590	611 - 2037	91.4 to 97.4
C4	14871	407 - 2648	82.2 to 97.2
D3	28727	0.00 - 20.3	99.9
D4	35242	0.00 - 20.4	99.9
E3	40540	0.00 - 40.7	99.9
E4	86519	0.00 - 5908	93.2 - 99.9
F3	49096	41762 - 46855	4.5 - 14.9
F4	49707	37484 - 44410	10.6 - 24.6

4.3 Air Infiltration Tests

A total of two tests were undertaken on each of the wall specimens A through F. Test no. 1 was undertaken prior to the application of the water repellents and test no. 2 after water repellent application. Test results are summarized below. Refer to appendix K for the raw data pertaining to these tests.

Table: no. 10: Summary of Air Infiltration Test Results

Nominal Pressure Differential (Pa)	Air Leakage Rate ($l/s \cdot m^2$)
25	0.23
75	0.56
150	1.04
300	1.85

5.0 ANALYSIS OF RESULTS

A summary of the experimental data for the various tests undertaken is presented in tabular format in appendices H, J, and K. This data has also been presented in the form of curves which are included in appendices G and I of this report. These curves will be used for discussion in subsequent sections of this report. The goal of the following sections is to discuss the test results and to evaluate the performance of products, assemblies, and test methods. Given the preliminary nature of the experiments and the limited available data, comments presented in the following sections are solely used for general discussion purposes and it is not the intent of this report to draw any definite conclusions from the data. As such, the basis of the following discussions will be that of establishing possible trends and to obtain un understanding of the performance of products under evaluation and the limitations of the test methods employed.

5.1 Modified ASTM E-514 Testing

Water penetration curves for panel assemblies A through F, illustrating the relationship between accumulated water (which passed through the specimens) and elapsed time of the test, were plotted (ref. figures G.1 through G.6 of appendix G). Upon first examination of the curves, the relationship between accumulated water and elapsed time appeared to be quasi-linear after an initial transitory period, for most of the test specimens (coated and uncoated). However, this transitory period appeared to be very short for untreated panels where an almost true linear relationship was attained after approximately one half hour of testing. For panels treated with masonry coatings, this transitory period was estimated to be approximately two to three hours prior to attaining steady flow conditions, for the stated test conditions . This characteristic may be explained by an extended sample saturation time brought on by a reduced water flow rate through the masonry for treated masonry panels. In other words, more time was required to fully saturate the masonry prior to attaining steady flow conditions.

With regards to the rate of water penetration through untreated masonry panels, flow rates ranging from 5176 ml/hr to 12265 ml/hr were determined. Given the linearity of the curves in question, flowrates were determined by performing a best fit linear regression of the experimental data. The results of this exercise are also presented with the curves of appendix G.

Three groupings were identified from the data obtained from these initial tests. A group comprising panels A and E (ref. figures G.1 and G.5) exhibited a rate of water penetration of 5177 ml/hr and 6068 ml/hr, respectively. A second grouping comprising panels B, C, and D (ref. figures G.2, G.3 and G.4) exhibited rates of 11473 ml/hr, 11477 ml/hr and 12266 ml/hr, respectively; and a third grouping comprising the control panel F exhibited a water penetration rate of 9063 ml/hr (ref. figure G.6). The variation in water penetration rates for the untreated panels may be attributed to the inherent anisotropic nature of the materials and slight imperfections introduced during the assembly of the test panels.

Application of the various masonry coatings to test panels A through E resulted in a dramatic decrease in the rate of water penetration for all coated panels; as was demonstrated by a series of tests which were conducted 35 days after product application (to allow for curing). Generally, a reduction of 44% to 99% from the initial water penetration rates of the uncoated panel assemblies were obtained. In addition, the control panel experienced an increase of approximately 33% in its rate of water penetration in comparison to initial test results. A summary of these initial results were presented table no. 1 of section 4.1.

As discussed in the previous sections of this report, five water penetration tests were conducted to evaluate the performance of the applied masonry coatings over a given period of time. In tables no. 2 through 4, the best, worst and average performance obtained during the series of tests for each the masonry panel assemblies was presented and compared to the panel's performance with no applied coating (ref. sec. 4.1).

A consistent drop in the performance of masonry panel assemblies was noted for the water penetration test results conducted over the seven month period. The performance of panel assemblies was plotted with respect to time and is presented in figure G.7, presented below for convenience. The gathered data may indicate a trend of decreasing performance over time. However, additional data is required to fully support this claim.

Based on the limited test data, the rate of percentage decrease in performance over the initial base performance of the uncoated panels was estimated for the various masonry coating materials. For this estimate, a best fit linear approximation to the performance data was carried out (refer to figure G.7). From these curves, the respective rates of performance decrease were computed and tabulated in table no. 5 of sec. 4.1. Note that select data points representing low performance test results were excluded from this analysis for the purpose of rendering a fair assessment. Based on these rates, the performance decrease and the projected reduction in water penetration for the assemblies were determined for periods of three, six and nine months, and one, two and three years following application of the masonry coatings.

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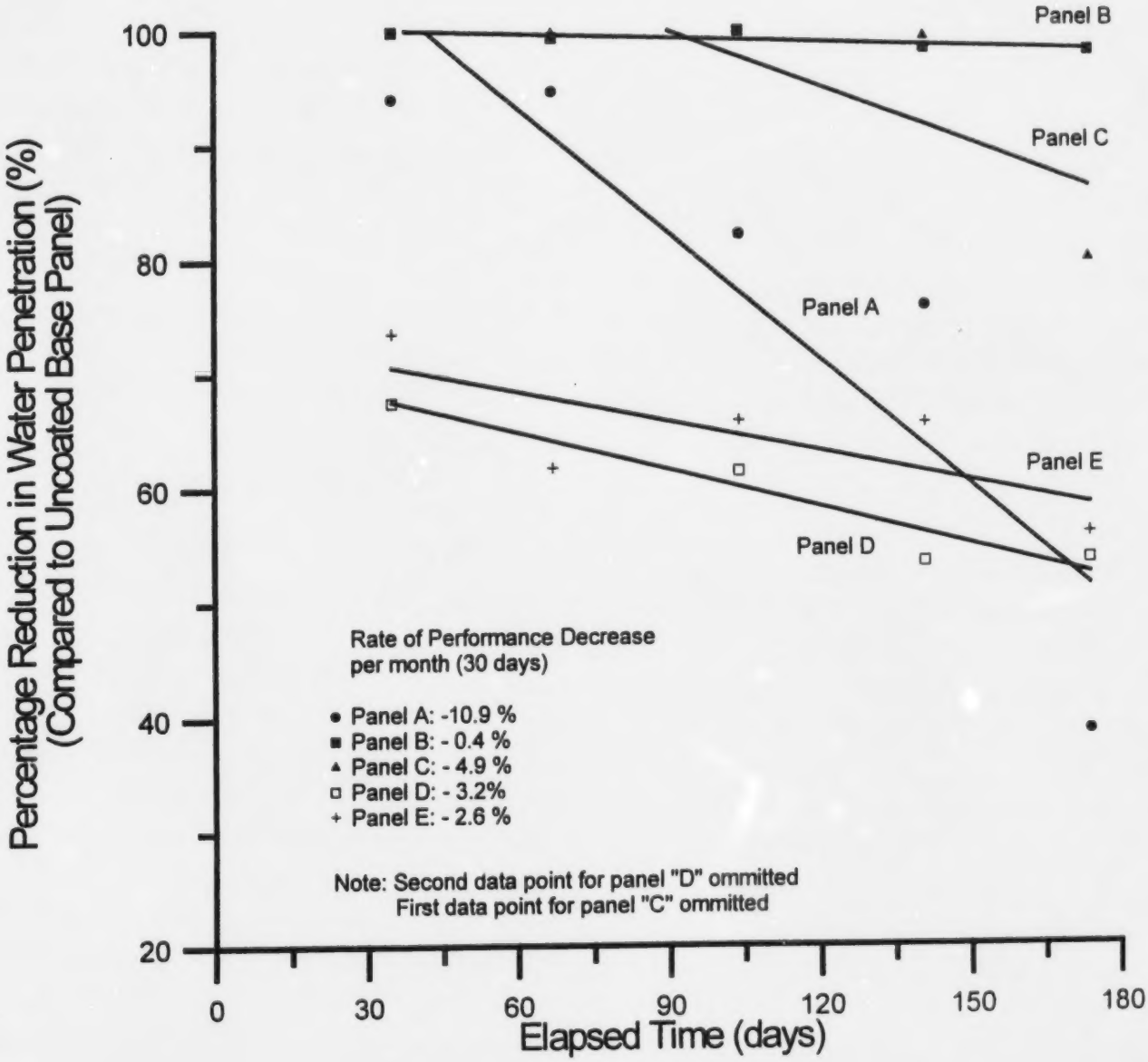
Figure G.7:
Estimated Coating Performance vs. Time



Based on the estimated rates of performance decrease, as presented in table no. 5, several of the applied coatings may require reapplication in order to maintain a suitable level of effectiveness.

Although it was not the goal of this study to rank the products under evaluation, the summary of table no. 6 was compiled to summarize the findings of the modified E-514 series of tests for panel assemblies A through E. For simplicity, high moderate and low performance levels have been arbitrarily selected for the various criteria which were considered during this discussion.

5.2 Water Uptake Tube Tests

Concurrent with the modified E-514 water penetration tests, water uptake tube tests were conducted on the panel assemblies under evaluation. Refer to the test log in appendix H for a detailed account of the dates on which these tests were conducted.

Data representing the time required to empty the graduated 5 ml volume of the test tube was recorded for predetermined locations on the surface of panel assemblies A through F. In each case a detailed recording of the time required for the water level to attain the various graduations of the test tube was recorded. In the event that an extensive time period was required to obtain a significant drop in the tube's volume, the level of the water column was recorded with respect to time at a predetermined interval which was convenient for the rate of change in volume. The experimental data is presented in graphical format in appendix I from which the rates of water penetration were approximated.

The rate of water penetration using the water uptake tube method was evaluated for the uncoated masonry wall panel assemblies. The data retrieved from these initial tests were determined to exhibit variability similar to that noted for the modified ASTM E-514 tests. In particular, substantial differences were noted between the results obtained from complementary test positions for mortar joints and brick face of uncoated panel assemblies.

As noted in the discussion of results for the modified E-514 tests, this variability may be attributed to localized material anomalies and minor imperfections introduced within the test panels during assembly. This phenomena was noticeably more pronounced for the water uptake tube tests given the highly localized nature of the test. At some of the test locations, the volume of the uptake tube was emptied instantaneously due to voids within mortar joints or through the seal between the uptake tube and the masonry surface. In these particular cases the results were discarded.

Table no. 7 summarizes the rates of water penetration obtained from water uptake tube tests for uncoated masonry wall assemblies at mortar joints and brick face locations. The location point at which the measurement was obtained is noted within parenthesis. In comparison, the rate of water penetration obtained across masonry joints exceeded that through the brick face locations by a factor of 5 to 30 (approximately), excluding high and low values.

As presented in table no. 7, average water penetration rates of 366.6 l/hr m^2 and 42.8 l/hr m^2 were determined for uncoated panel assemblies at mortar joint locations and brick face locations, respectively.

A summary of the test data for coated and uncoated panel assemblies was presented in tables no. 8 and no. 9 and has been expressed as a flowrate per unit area. Given the variability in the results and the limited test data for this particular series of tests, change in performance is presented as a range expressing the net improvement in comparison to the base or uncoated panel assembly.

With regards to the reduction in the rate of water penetration across the panel assemblies at the mortar joints, reductions in the order of 34.1% to 99.7% in comparison to the uncoated or base panel assembly were obtained. For brick face locations, reductions in the order of 91.4% to 99.9% were obtained, in which the panel assemblies (at the brick face) were rendered almost totally impervious (refer to table no.9).

A reduction in the rate of water penetration in the order of 4.5% to 24.6% was also observed at the brick face for the control panel F. In comparison, an increase of approximately 49% to 57% was observed for the rate of water penetration in the control panel at mortar joints. This variation may be attributed to the condition of the control panel prior to the test. Factors including the degree of saturation for the uncoated masonry of the control panel and other climatic factors may have impacted on the results of the experiments.

The limited data presented in this part of the discussion would indicate that water penetration test results obtained though the water uptake tube method are highly influenced by the location at which the test is conducted. Given the significant differences which were obtained between measurements obtained at mortar joints and the face of the brick, it was clear that considerably more data would be required to establish the actual performance of masonry coatings on a masonry substrate utilizing this method. As such, an evaluation of individual product performance cannot be undertaken. However, the available data indicates that as a whole, all of the products exhibited very high levels of water repellency.

With regards to changes in performance over time, four of seven water uptake tube tests conducted at mortar joints indicated a decrease in water repellency over time (ref. figure I.1 through I.7). In comparison, eight of twelve tests conducted at the brick faces demonstrated a decrease in repellency over time (ref. figures I.8 through E.19). Given the limited available data, no generalization can be made regarding the performance of repellents over an extended period, based on the water uptake tube method.

5.3 Air Infiltration Testing

The panel assemblies were also subjected to air infiltration tests as part of the series of evaluations conducted on the panel assemblies. As discussed in section 3.4.3 of this report, air infiltration tests were conducted on each of the panel assemblies prior to and following the application of masonry coatings.

The results for the air infiltration tests are summarized in the table below. The experimental data obtained prior to and following the application of the masonry coatings indicated no significant change in performance for any of the panel assemblies. As such, it was concluded that the application of masonry coatings had no impact on the air flow characteristics of the panel assemblies. In addition, very similar leakage characteristics were obtained for all panel assemblies (including coated assemblies) at the various differential test pressures. The average leakage characteristics obtained for the masonry panels at the stated pressure differentials are summarized in table no. 10 of sect. 4.3.

6.0 CONCLUSIONS AND RECOMMENDATIONS

Several test methods were utilized over a period of seven months for the purpose of evaluating the change in performance brought on by the application of coatings on seven masonry panels. The results and analysis of such a study, presented in previous sections of this report, have indicated substantial improvements in the resistance to water penetration upon application of commercially available masonry coatings. This change in performance was primarily evaluated through the use of a water uptake tube method and by ASTM E-514 test method; adapted for the requirements of this particular study.

Although these improvements in water repellency were generally confirmed by these two test methods, limitations were noted for each of the methods. Several factors were identified which could influence or bias test results.

6.1 Modified ASTM E-514 Test Method

With regards to the modified E-514 test, slight, normally occurring imperfections in the wall assembly, including small openings in the mortar to brick interface contributed to its overall leakage rating. The importance of these small openings at the given test pressure of 500 Pa cannot be neglected as significant amounts of water may easily be transported through the presence of these small conduits through the masonry. It is clear that even the presence of a small opening in an otherwise impervious sheet

material will result in significant amounts of water being transported across the material at high pressure differentials . Likewise, a very effective masonry water repellent would have little impact on minor openings at similar pressures.

Given this, it becomes evident that the evaluation of the resistance to water penetration for a masonry panel (or any other assembly for that matter) with this method will require a larger sample population to better evaluate the effect of imperfections of the assembly on the test results. Otherwise, an evaluation based on the modified E-514 method would be more representative of a combined assembly performance (i.e. masonry & water repellent) rather than the performance of the repellent itself.

6.2 Water Uptake Tube Test Method

In comparison to the modified ASTM E-514 method, the water uptake tube method for the evaluation of water repellency is also limited. By very nature of this particular test method, results obtained by the water uptake tube method are representative for a highly localized area and are very susceptible to surface imperfections. This is especially important at points of material transition, as was noted at mortar joints in the brick panel assemblies. Therefore, it is our opinion that an accurate assessment of a material's water repellency or resistance to water penetration based on this method would require a significant number of tests distributed over a large surface.

Barring local material or assembly imperfections, the evaluation of a masonry coatings by the water uptake method should in theory be a better gauge for a comparative evaluation of coating performance (as opposed to that of the assembly). This is supported by the preliminary data in which all coating materials exhibited high water repellency characteristics, as evaluated for the brick face of the masonry. These same coatings, evaluated by the modified ASTM E-514 procedure, produced significantly different results.

The modified ASTM E-514 test data may have also revealed a trend indicating an increase in the rate of water penetration over time in comparison to results obtained following the initial application of the masonry coating products. As mentioned earlier

in this report, this phenomena may be due to product deterioration which would necessitate its reapplication after a given time interval. Additional investigation is required to evaluate this phenomena. It is recommended that the specimens be retested every year, on a reduced frequency basis, for a period of at least 5 years to obtain performance information for extended exposure. Given the difficulties encountered with the current test methods, alternate methods could be considered.

6.3 Air Infiltration Test

With regards to the air leakage characteristics of the wall assembly, the preliminary test data indicated no significant improvement in a masonry wall's performance as an air barrier. As such, the evaluation of the panel assemblies' air leakage characteristics was terminated.

Although the resistance to water penetration is an important criteria in the selection of water repellant, consideration to vapour diffusion performance is also an important performance characteristic which must be considered prior to the selection of a water repellant.

The study of vapour diffusion through masonry panel assemblies coated with water repellents is currently being evaluated as a separate mandate.

APPENDIX A: TEST CHAMBER DESIGN CRITERIA

Sample size: As per ASTM E-514, a minimum of 1.1 m^2 of wall shall be exposed to testing with a minimum height or length of the specimen measuring four feet.

Air pressure: As per ASTM E-514, the test chamber shall be able to maintain a minimum 500 Pa. differential air pressure for a period of at least four hours.

Exterior exposure: The test chamber should enable the samples to remain exposed to natural meteorological conditions for extended periods of time with a southern exposure. The back side of the samples should remain sheltered from these conditions (i.e. water, snow, light etc...).

Handling of samples: The necessity of handling and transporting the samples after erection should be avoided in order to reduce the risks of introducing cracks and stresses.

Access to wall samples: Both sides of the test samples should be easily accessible for observation and testing purposes.

Water collection: Each sample required an individual water collection system in order to enable the recuperation and measurement of water infiltrating through each sample during testing.

Flexibility: The test chamber should be versatile and permit the possibility of installing and displacing different testing accessories on both sides of the samples.

Working area: There should be sufficient room on the inside and outside of the chamber to allow the technicians to carry out their work. The interior of the chamber should comprise facilities (i.e. lighting, heating, electrical sources etc...) and a suitable working environment so as to permit uninterrupted testing by a technician for a minimum four hour period.

Stability: The test chamber shall be stable enough to withstand wind and snow loads.

APPENDIX B: PROCEDURE FOR MODIFIED ASTM E-514 TEST METHOD

Water supply:

- Install spray shroud and rack assemblies on wall specimens
- Adjust rate of water application corresponding to a flow rate of 138 l/hr wall per m^2 of wall.

- Start applying water only once the test is ready to begin.

Air supply:

- Connect digital micromanometer inside the chamber and connect exterior pressure reference to pressure tap on the front side of the chamber.

- Install the variable transformer inside the chamber and connect to the centrifugal blower.
- Close and clamp the access door air tight.
- Adjust and maintain the differential air pressure across the chamber to 500 Pa.

Testing:

- Once the rate of water application has been adjusted and the test pressure reached, begin tracking test duration with a digital stop watch.
- Maintain test conditions for 4 hours.

Test readings:

- Place a water recipient below each of the water collection systems of the specimens being tested. (photograph no. 15)
- At 30 minute intervals, measure the volume of collected water with a graduated cylinder and record on data sheets (8 readings per test, per specimen, photograph no. 16).
- Ensure no interruption of the water being collected.
- Empty the measured water into the drainage outlet after each reading.

Panel diagrams:

- Record all observations on panel diagrams.
- Record first time of dampness and first visible water on the back of the specimen.
- At 30 minute intervals, indicate areas of dampness, visible water and running streams.

APPENDIX C: PROCEDURE FOR WATER UPTAKE TUBE TEST METHOD

- Affix the testing apparatus to the test area by interposing a tape of putty between the flat, circular brim of the pipe and the surface of the masonry material.

- Exert manual pressure on the cylinder in order to ensure proper adhesion.

- Add water through the upper, open end of the pipe until the column reaches the 0 graduation mark.

- Read the quantity of water absorbed by the material during a given period of time directly from the graduated tube.

APPENDIX D: PROCEDURE FOR AIR INFILTRATION TEST METHOD

The testing apparatus utilized for purposes of air testing comprised the following components:

- Multi-stage centrifugal blower with a 47 l/s capacity.
- Variable transformer with a 0-110 volt output for air flow adjustment.
- Orifice flow meters.
- Digital differential micromanometer with a 0-2000 Pa range and a 1 Pa resolution.

The test procedures for measuring air leakage across each specimen are as follows:

- Install and clamp air chamber to test specimen.
- Connect digital micromanometer to exterior pressure tap and air chamber pressure adaptor.
- Connect Mini-Lab blower assembly to air chamber air flow adaptor.
- Adjust and maintain the differential air pressure across the specimen to the specified testing pressure.
- Record the air flow rate from the flow meter when pressures have stabilized.
- Repeat tests at 25 Pa, 75 Pa, 150 Pa and 300 Pa pressure differential.

APPENDIX E: FIGURES

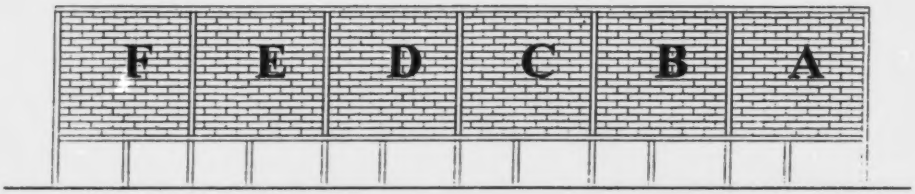


FIGURE E.1: IDENTIFICATION OF TEST PANEL ASSEMBLIES.

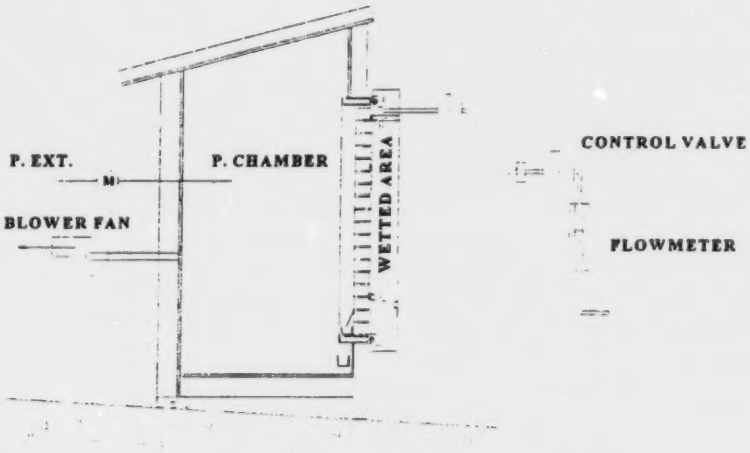


FIGURE E.2: MODIFIED ASTM E-514 TEST APPARATUS

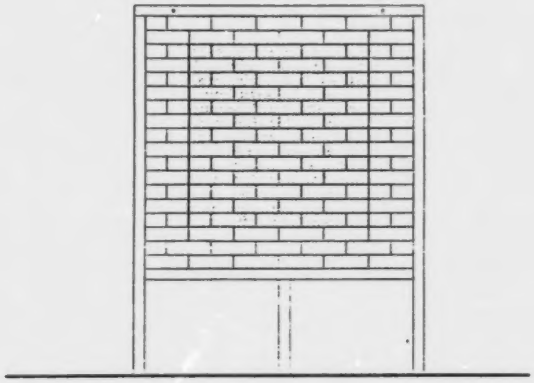


FIGURE E.3: TEST AREA FOR WATER PENETRATION TEST

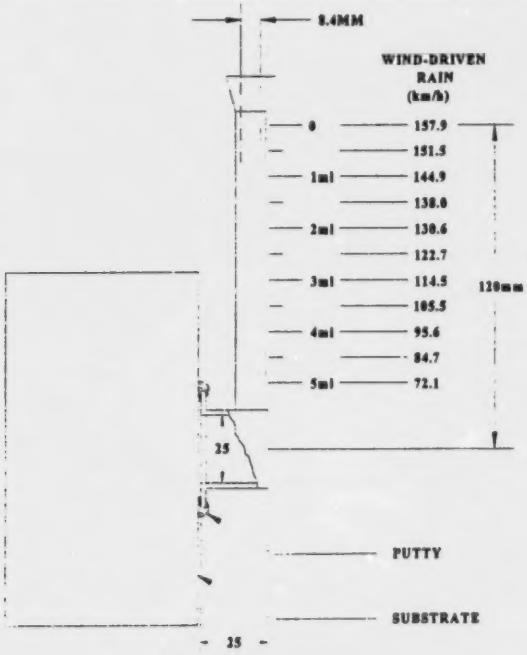


FIGURE E.4:

WATER UPTAKE TUBE TEST APPARATUS

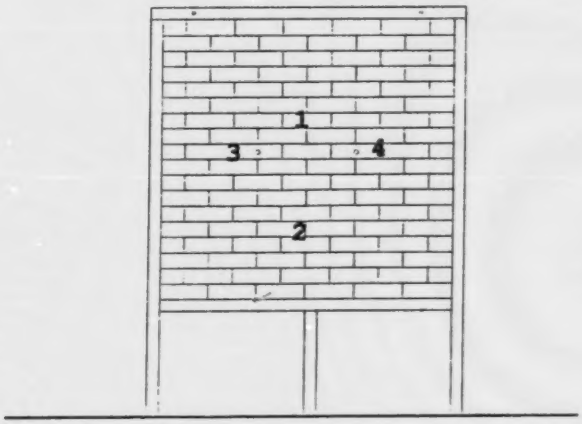


FIGURE E.5:

IDENTIFICATION OF WATER UPTAKE TEST LOCATIONS

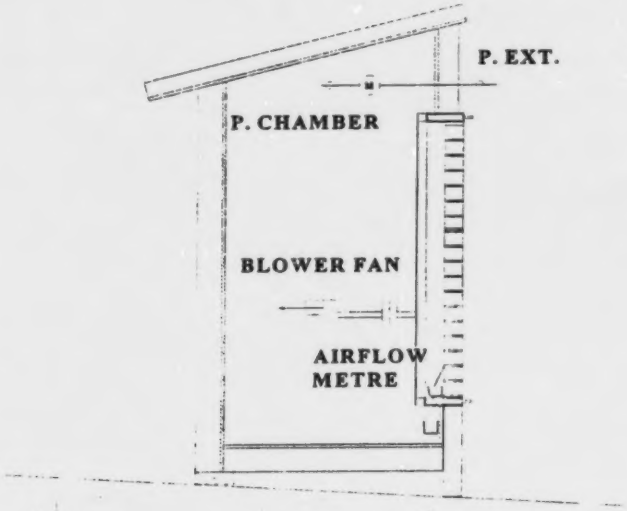
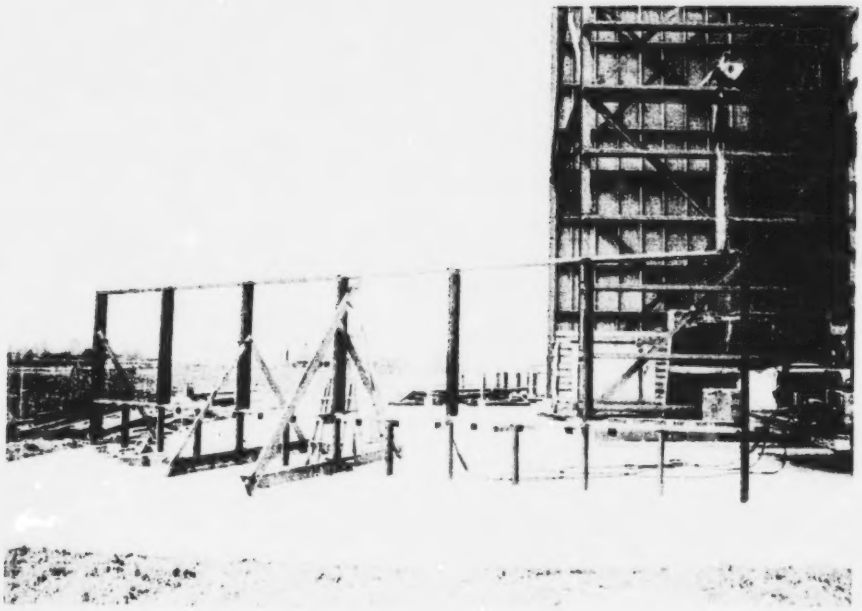
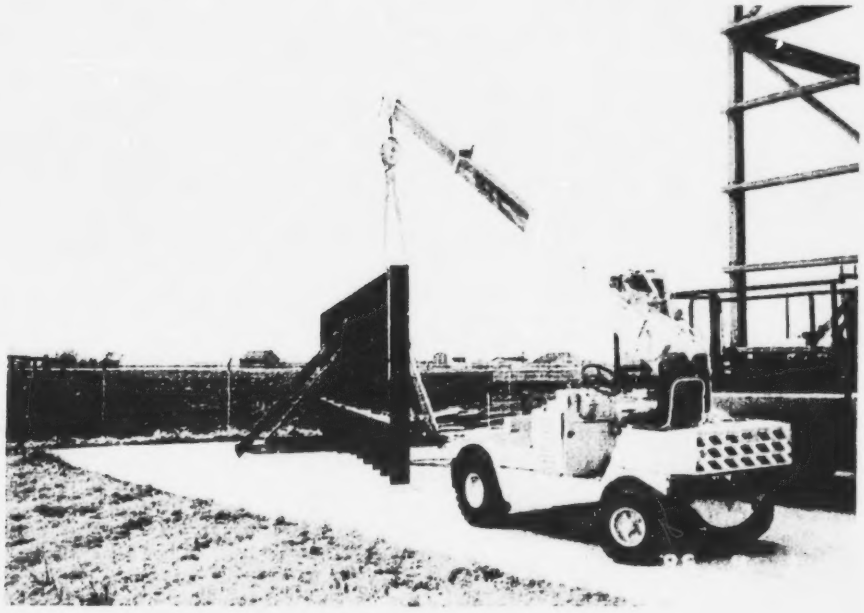


FIGURE E.6: AIR INFILTRATION TEST APPARATUS

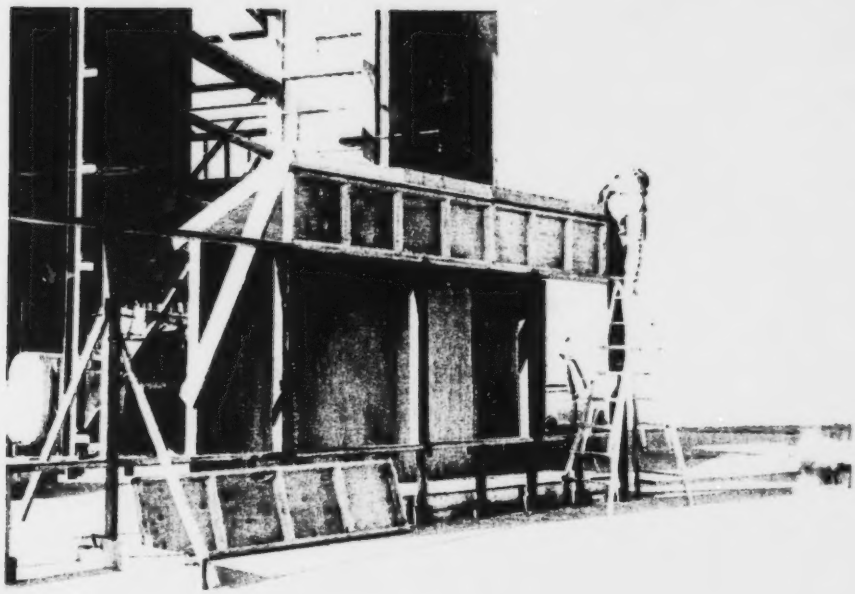
APPENDIX F: PHOTOGRAPHS



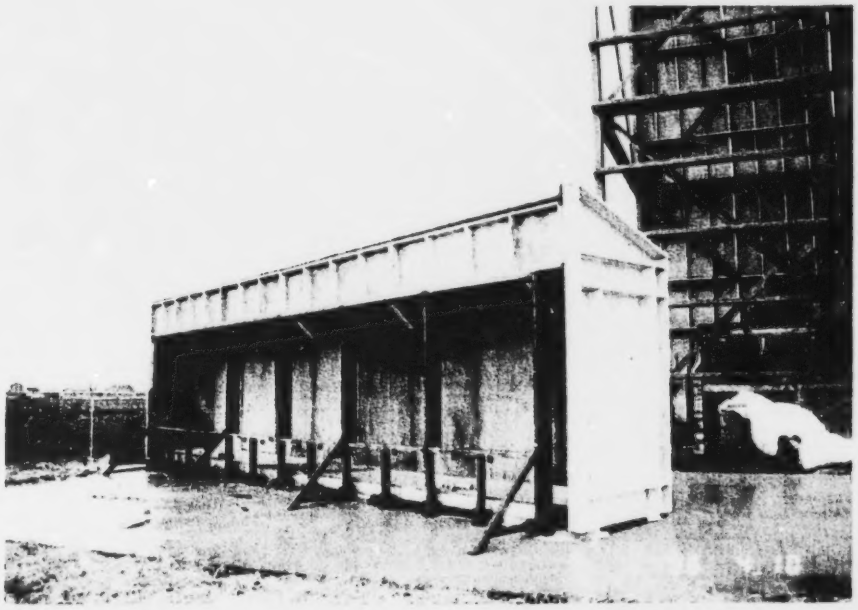
Photograph no.1: Erection of steel framing for the six wall specimens.



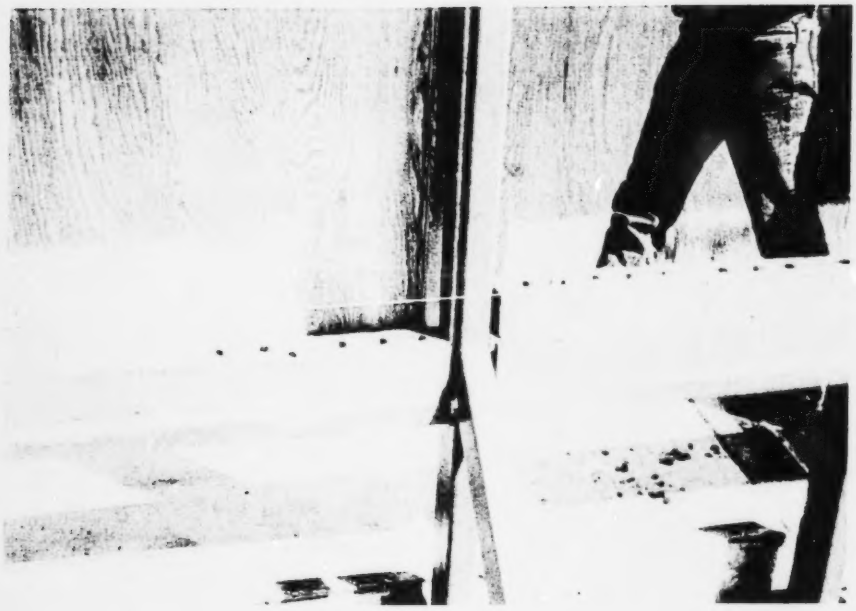
Photograph no.2: Erection of steel framing for the six wall specimens.



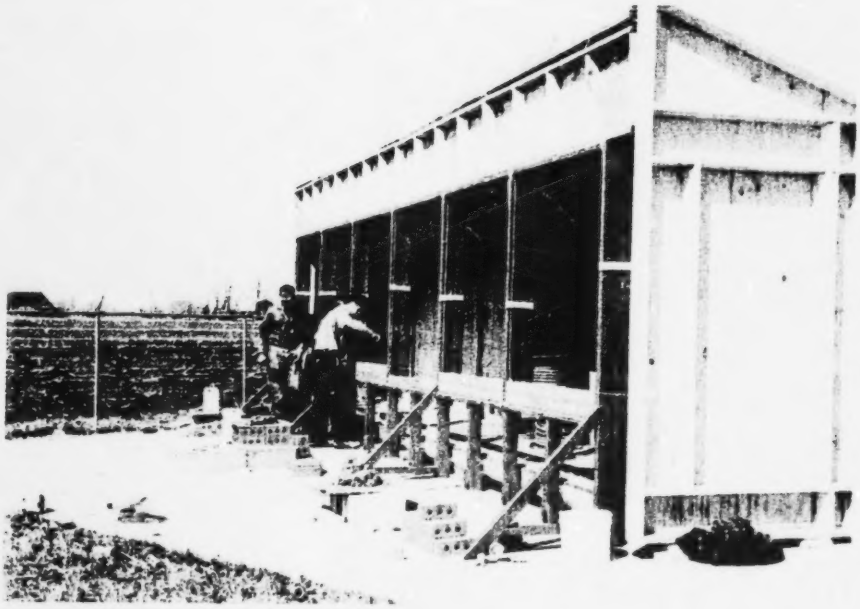
Photograph no.3: Erection of prefabricated chamber panels.



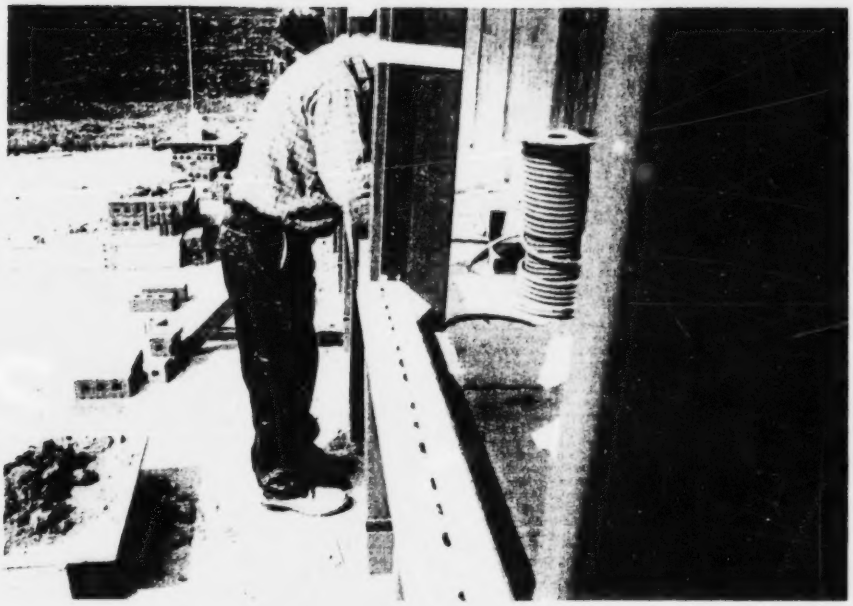
Photograph no.4: Test chamber prior to erection of wall specimens.



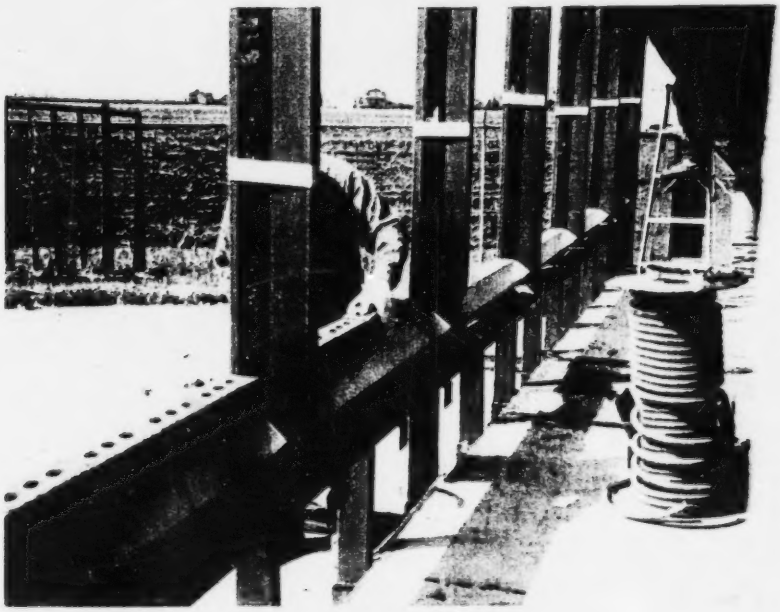
Photograph no.5: Erection and allignement of first two brick rows.



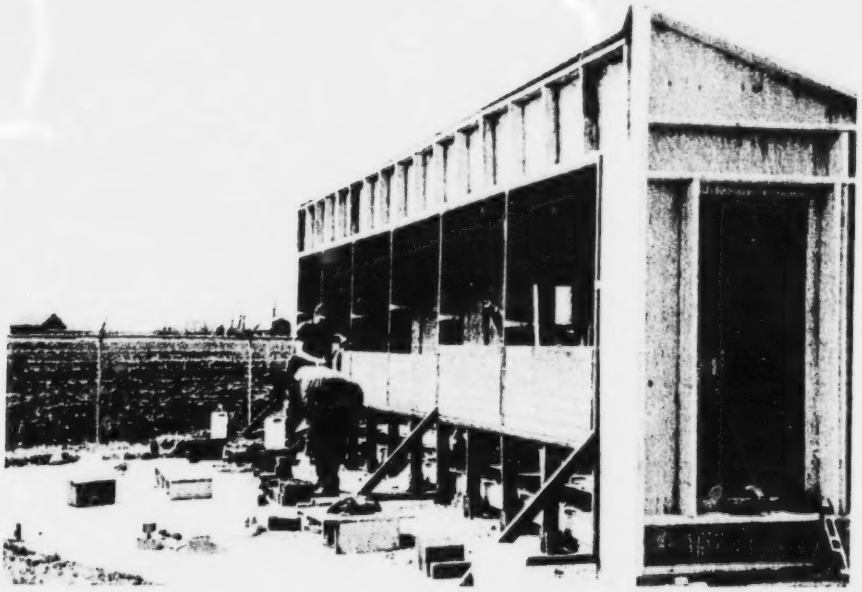
Photograph no.6: Erection and allignement of first two brick rows.



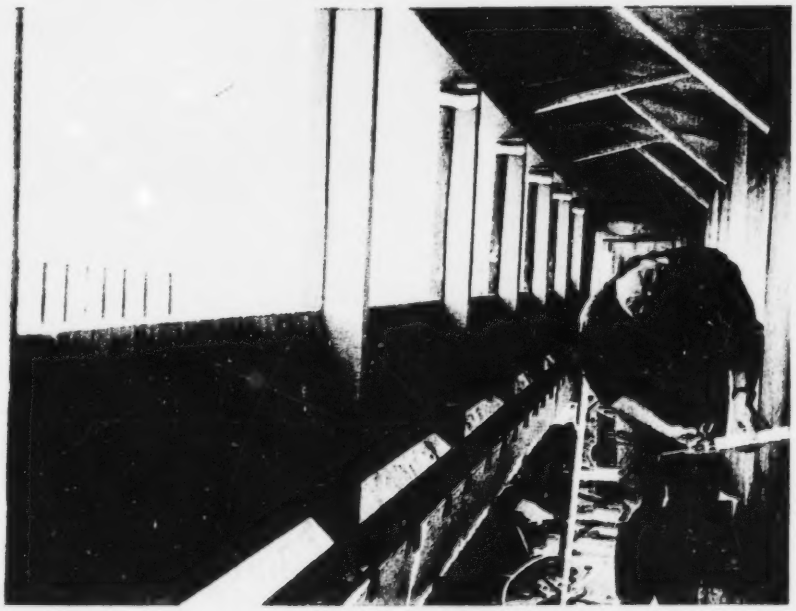
Photograph no.7: Installation of metal flashing for recuperation of run-off water.



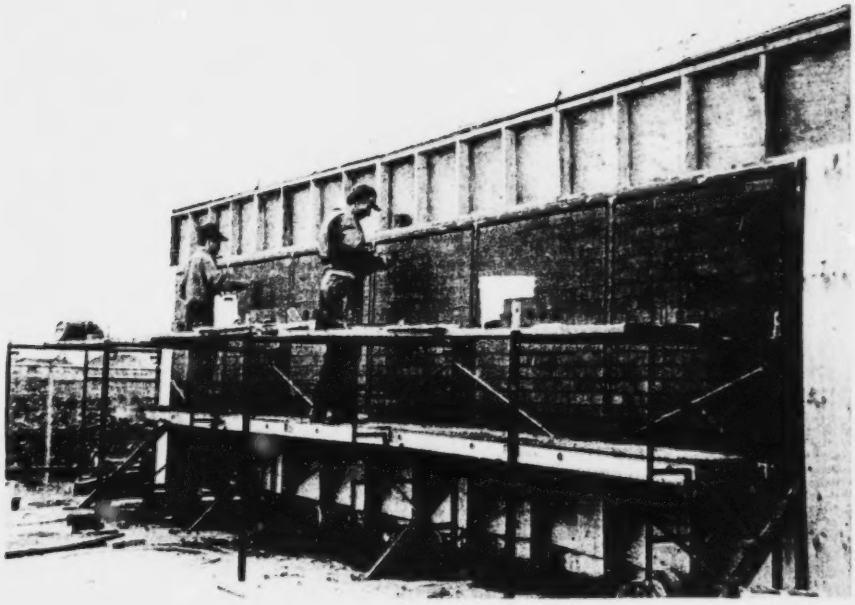
Photograph no.8: Installation of metal flashing for recuperation of run-off water.



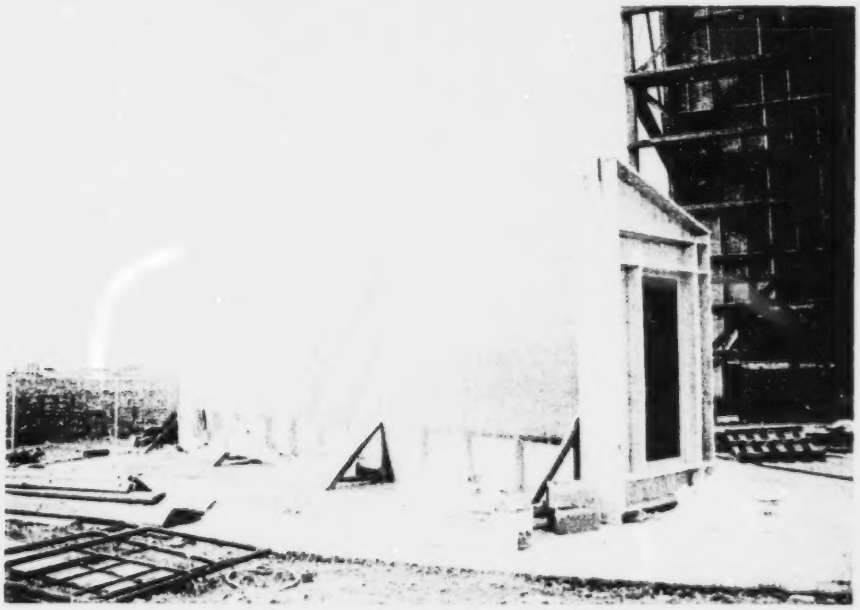
Photograph no.9: Erection of wall specimens.



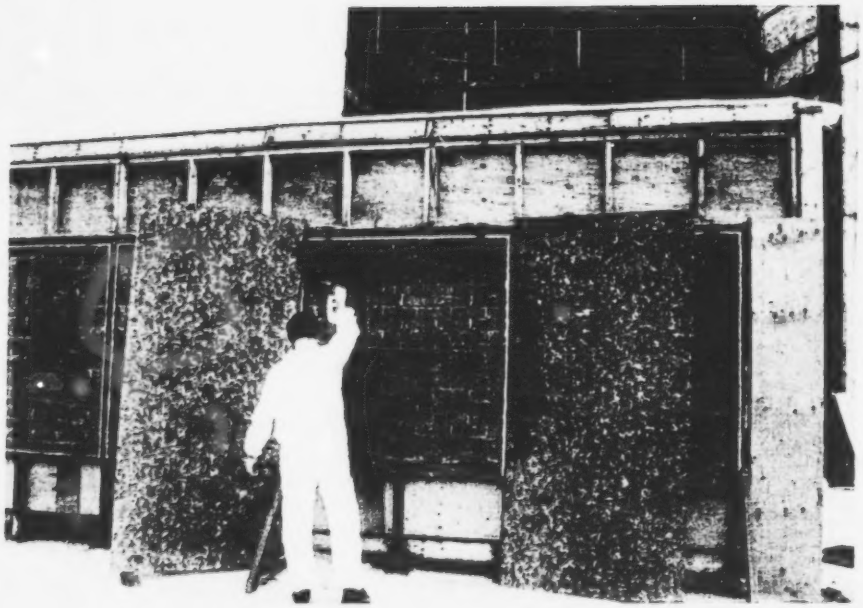
Photograph no.10: Erection of wall specimens.



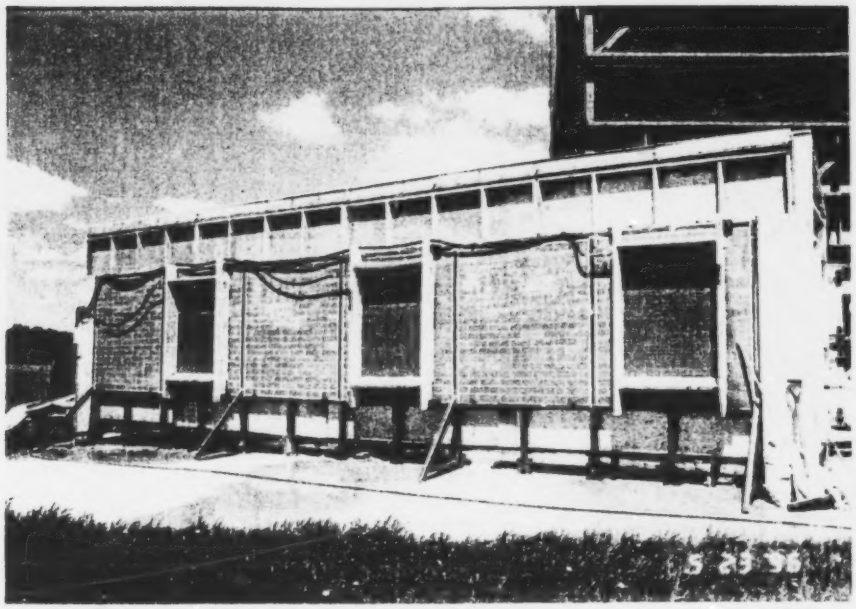
Photograph no.11: Tooling of mortar joints.



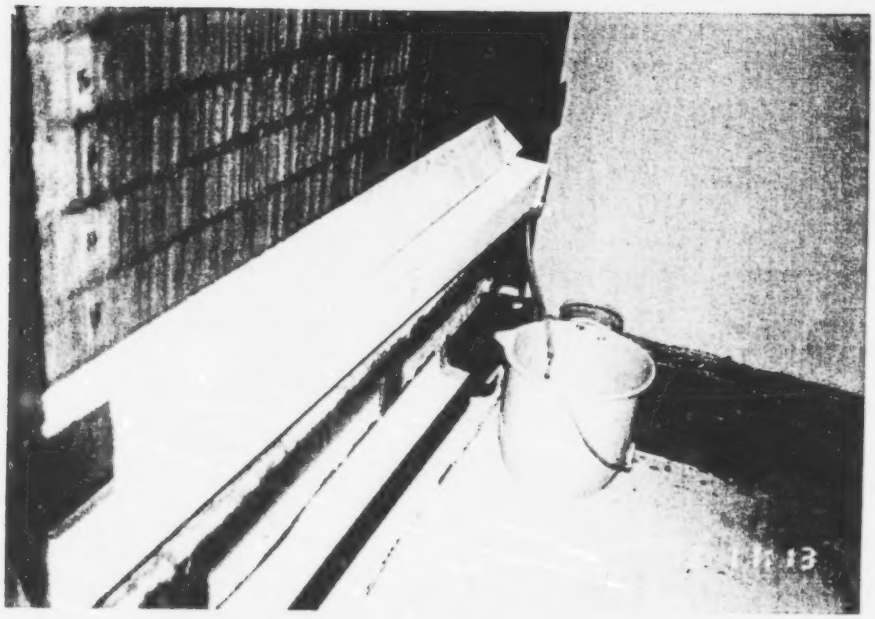
Photograph no.12: Curing of wall specimens.



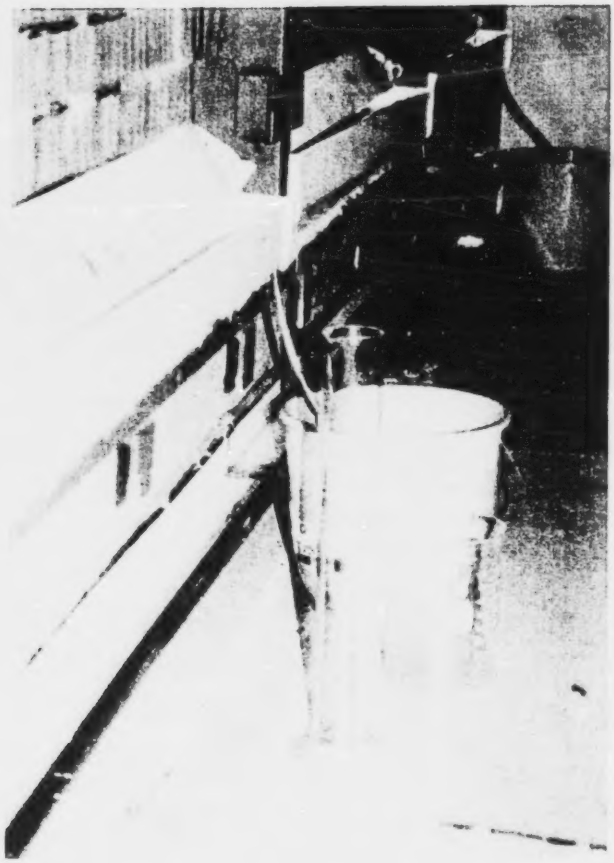
Photograph no.13: Application of water repellent.



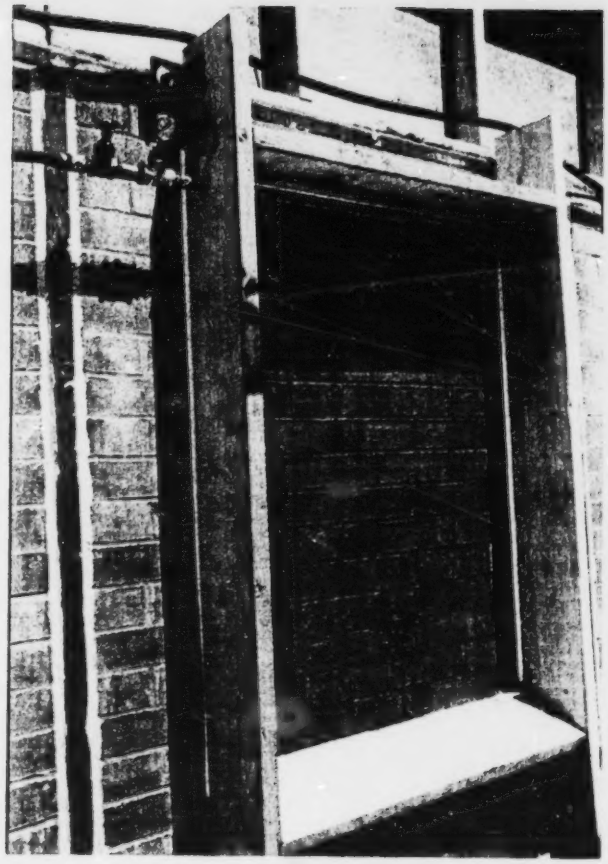
Photograph no.14: Modified ASTM E-514 test in progress (test no. 1).



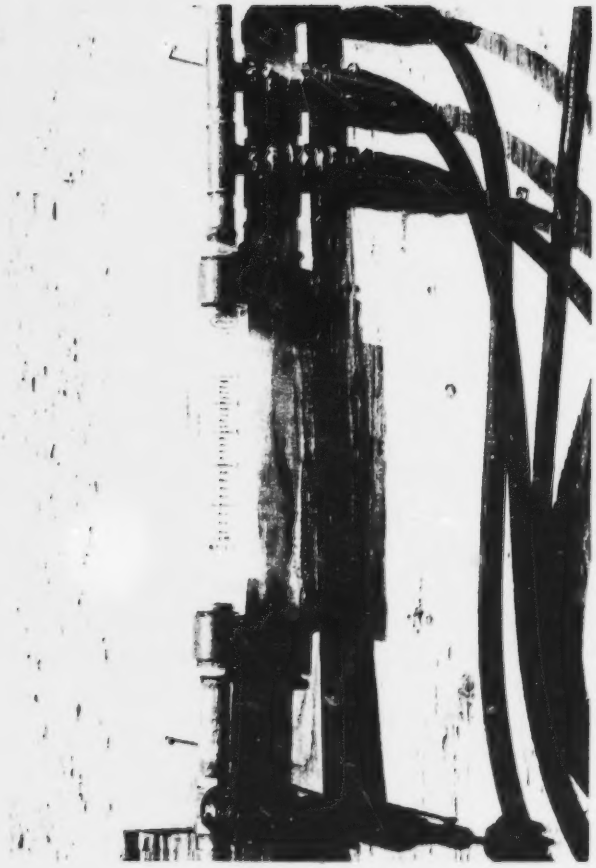
Photograph no.15: Water recuperation system.



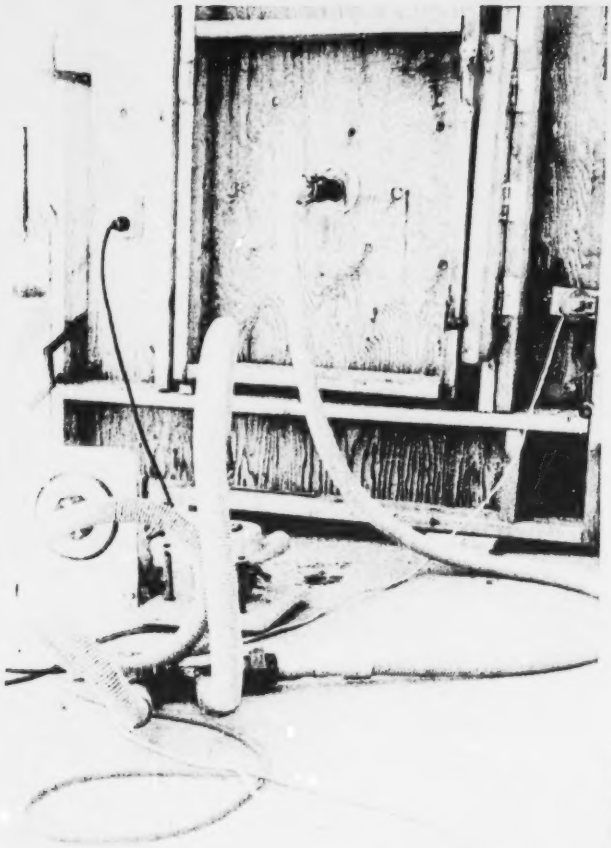
Photograph no.16: Measurement of recuperated water.



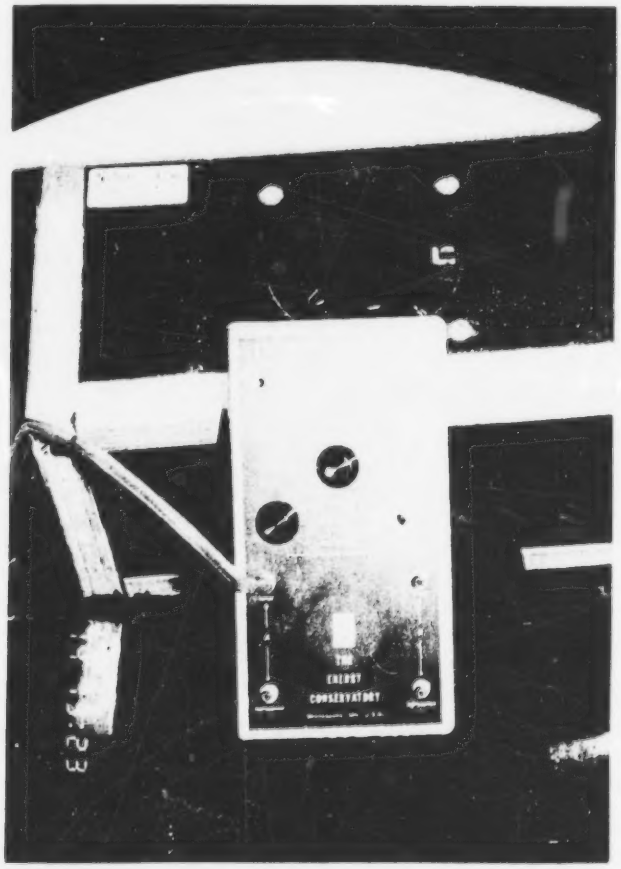
Photograph no. 17:
Spray rack for modified ASTM E-514 test.



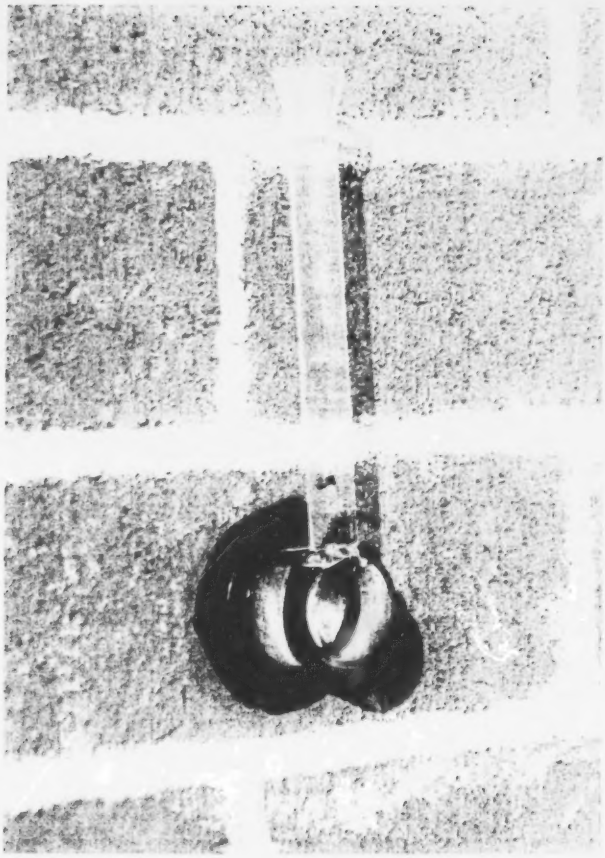
Photograph no.18:
Flow meter for modified ASTM E-514 test.



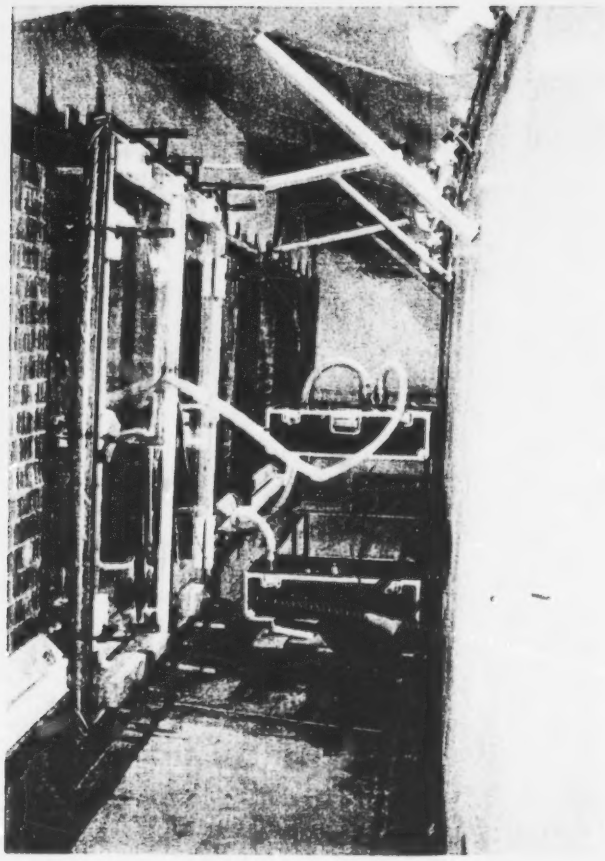
Photograph no. 19:
Blower set-up for modified ASTM E-514 test.



Photograph no.20:
Digital differential micromanometer.



Photograph no.21: ProSoCo tube.



Photograph no.22: Air test set-up.

APPENDIX G: MODIFIED ASTM E-514 TEST CURVES

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Figure G.1:
Modified ASTM E-514 Test
Panel A

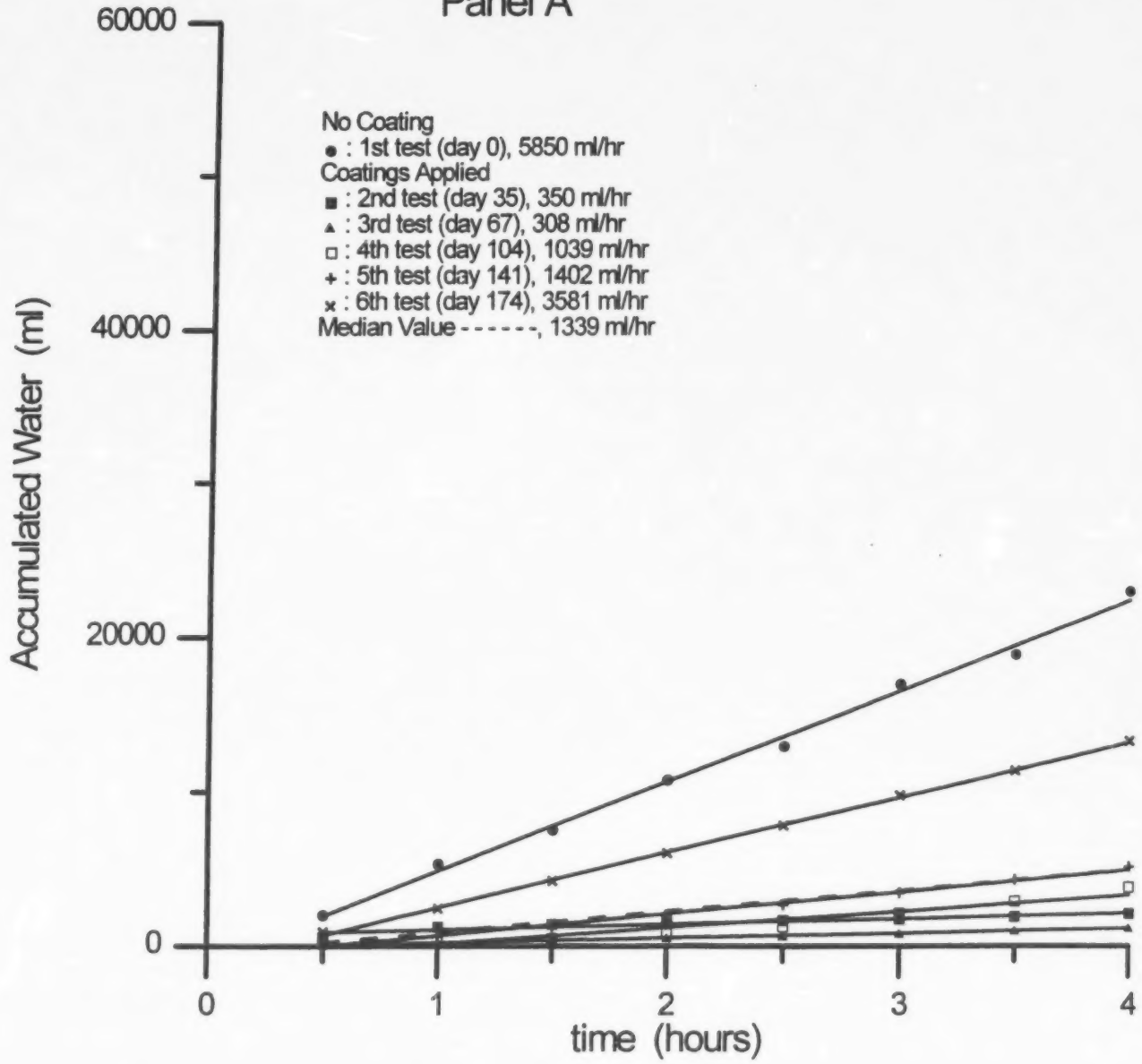

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Figure G.2:
Modified ASTM E-514 Test
Panel B

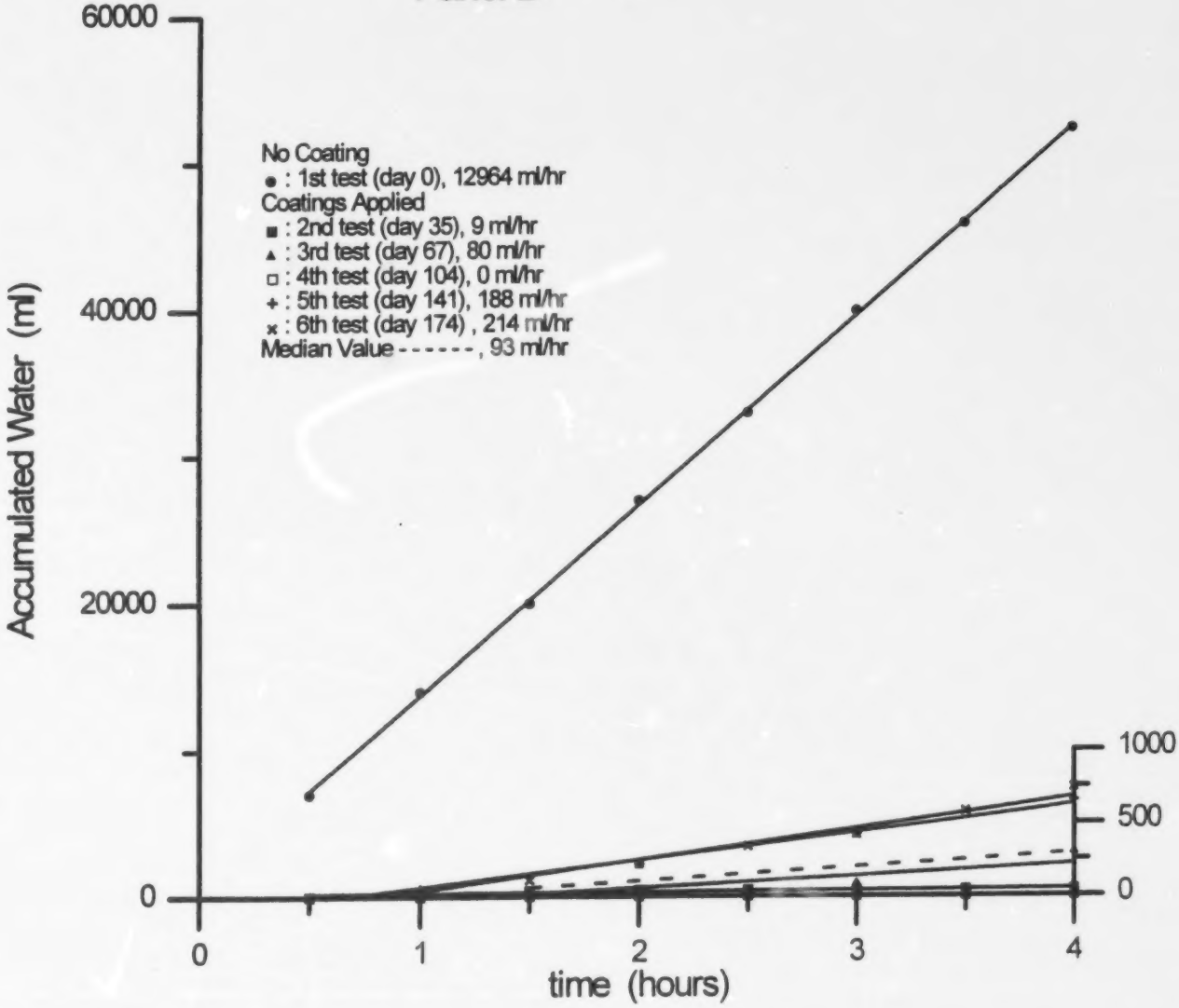

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Figure G.3:
Modified ASTM E-514 Test
Panel C

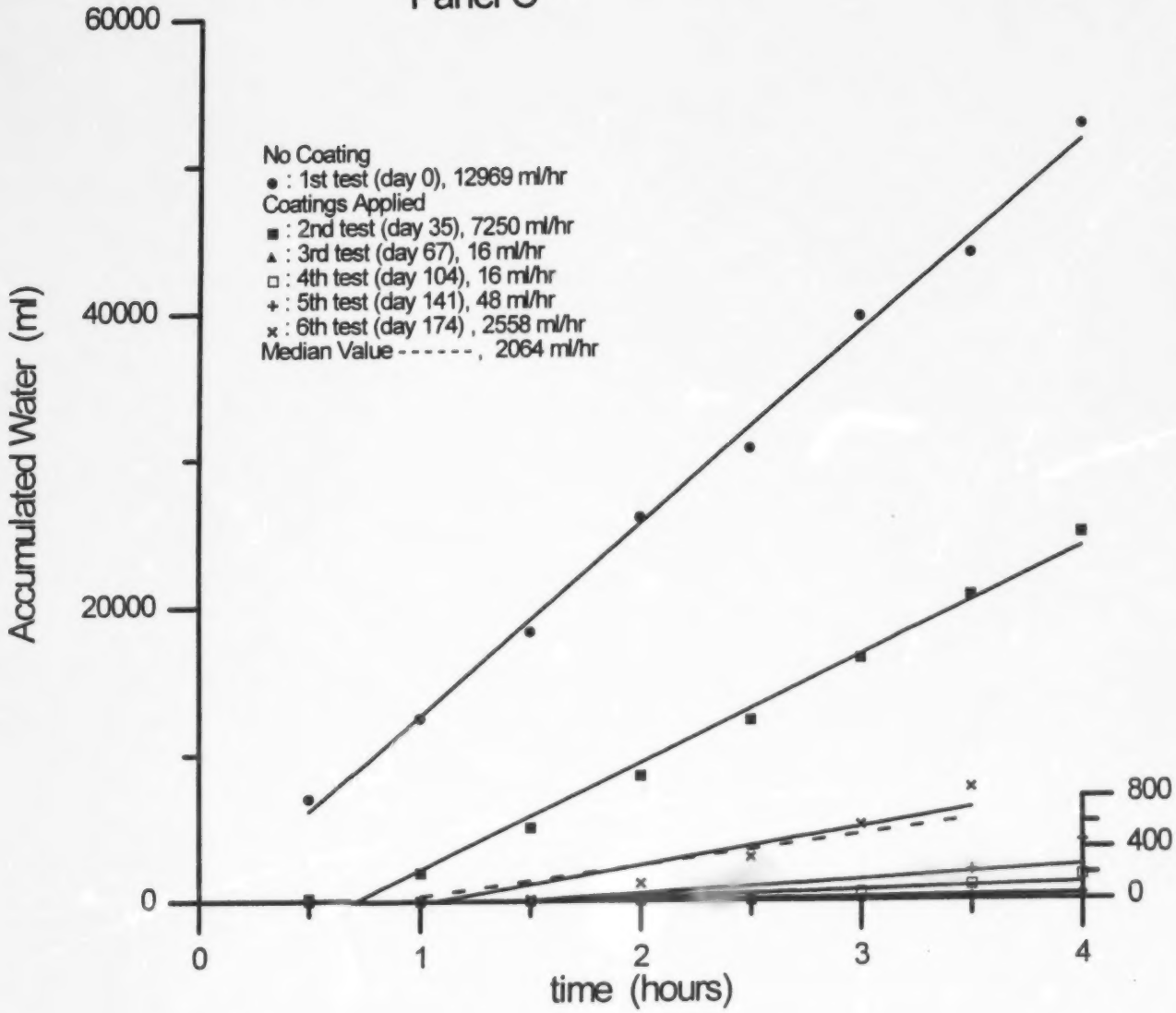

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Figure G.4:
Modified ASTM E-514 Test
Panel D

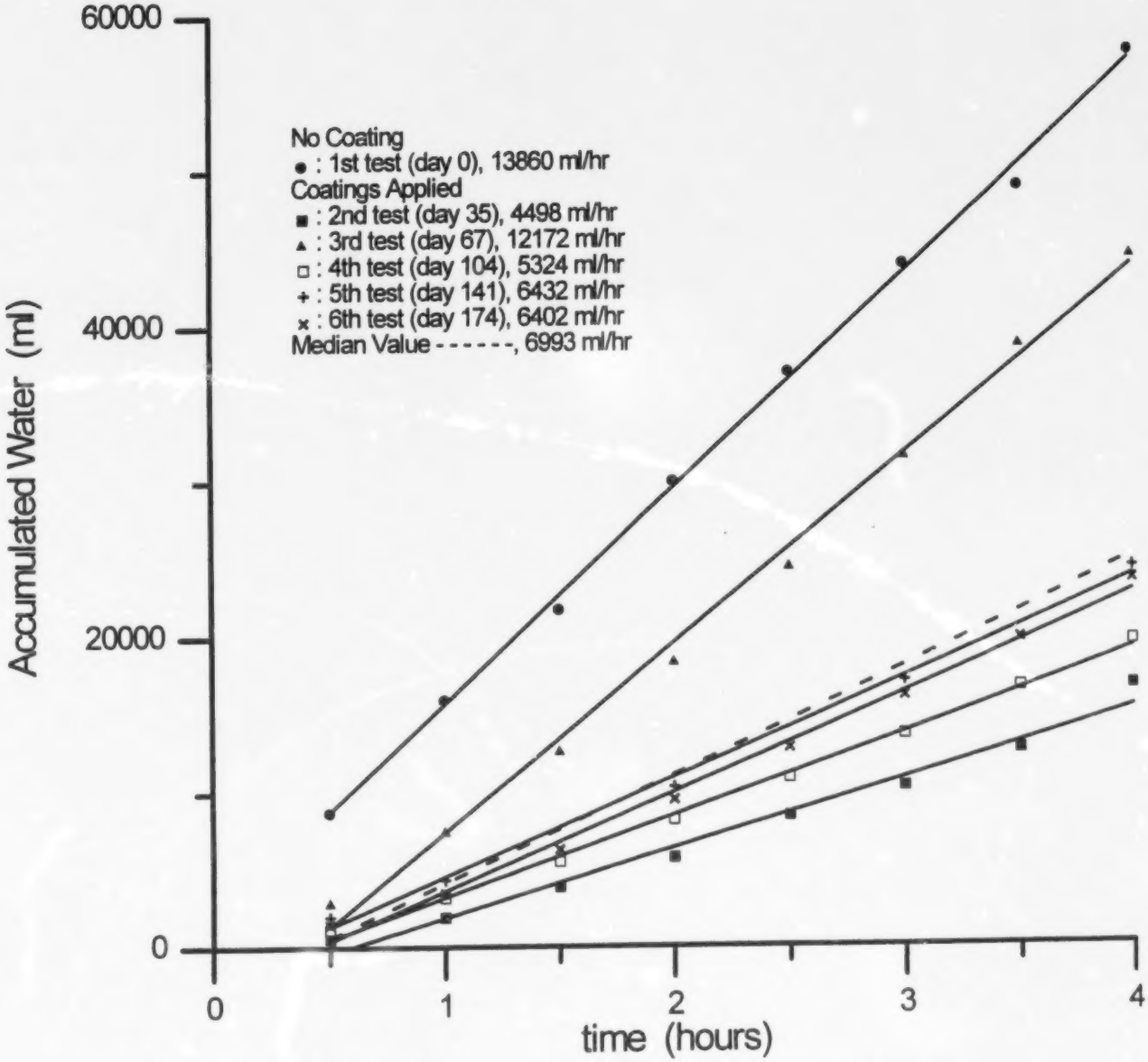

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Figure G.5: Modified ASTM E-514 Test Panel E

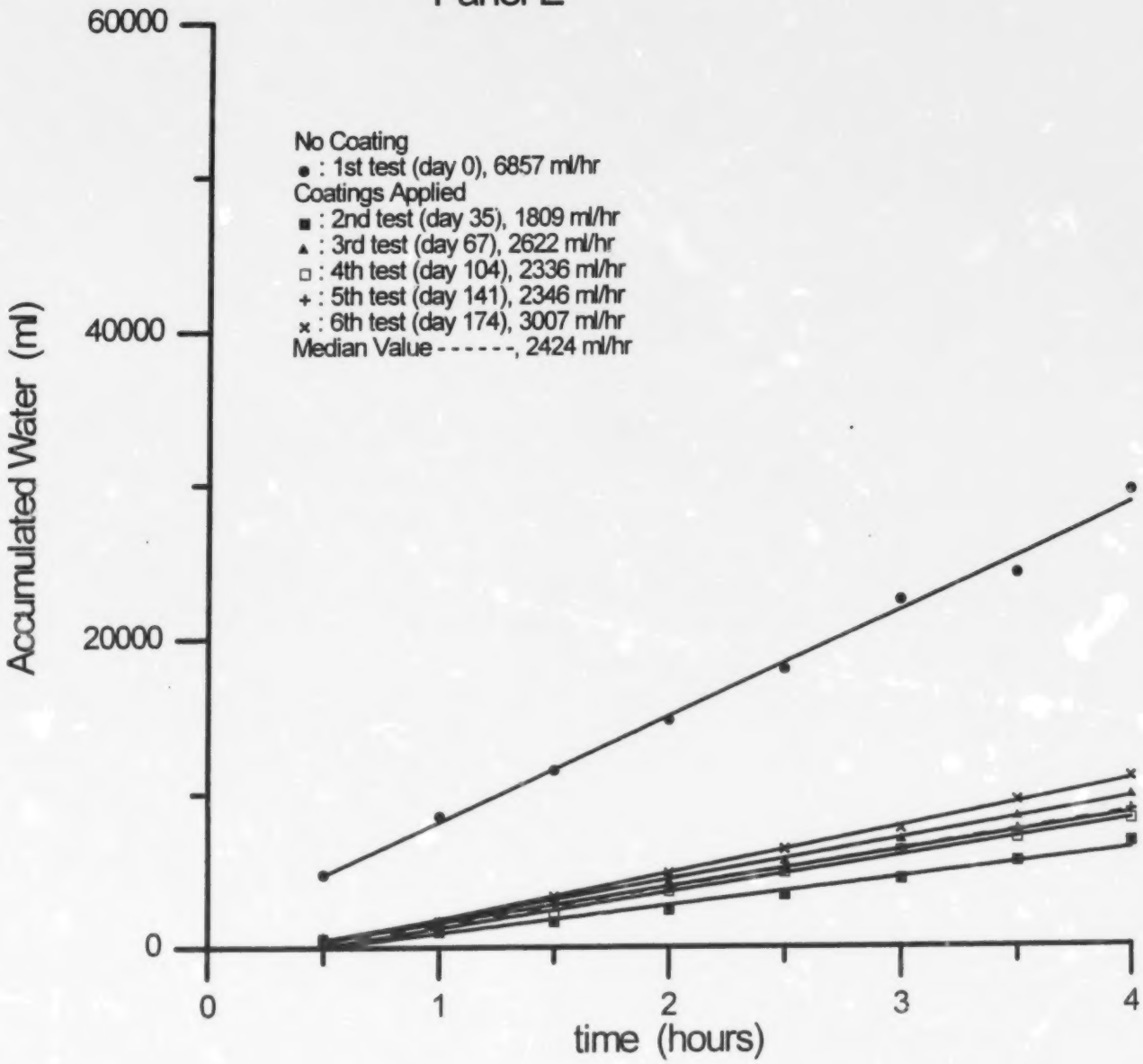

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Figure G.6:
Modified ASTM E-514 Test
Panel F

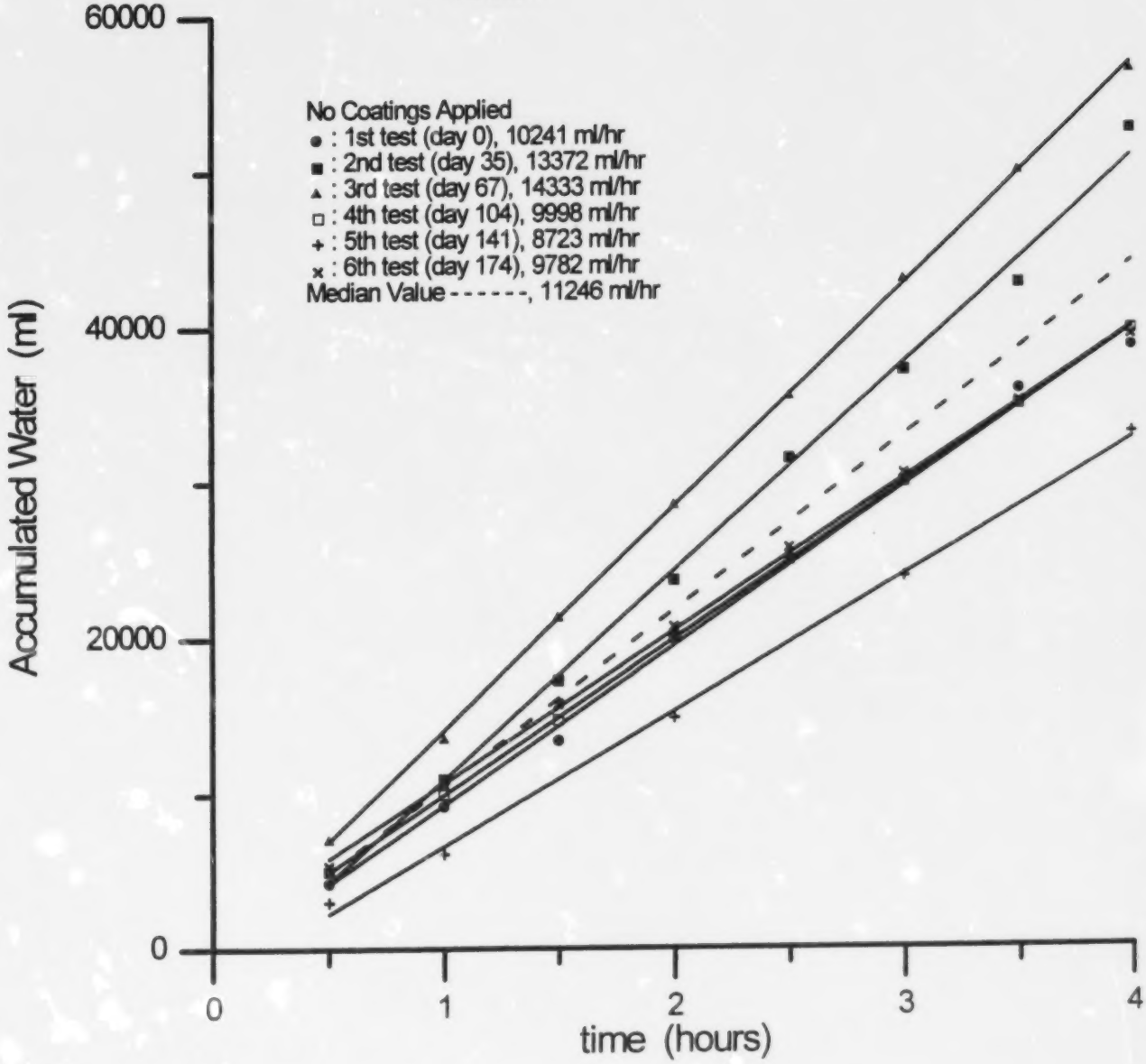

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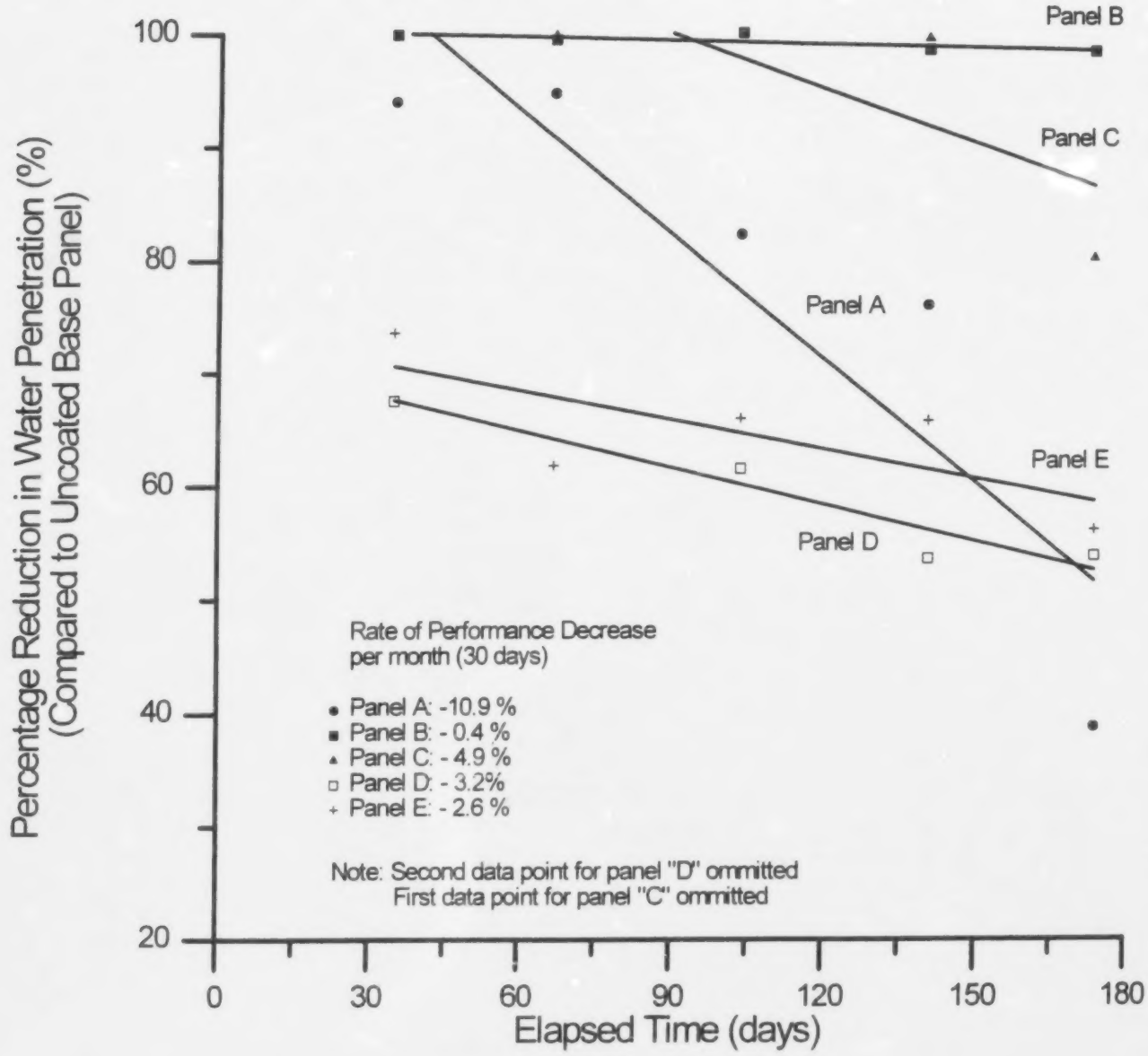
Figure G.7:
Estimated Coating Performance vs. Time



APPENDIX H: MODIFIED ASTM E-514 EXPERIMENTAL DATA

TABLE H.1: MODIFIED ASTM E-514 TEST
PANEL A

TIME ELAPSED	Test No.1	Test No.2	Test No. 3	Test No.4	Test No.5	Test No.6
30 min.	*2,000 ml.*	*600 ml.*	*100 ml.*	*140 ml.*	*300 ml.*	*920 ml.*
1 hr.	*5,300 ml*	*1,240 ml.*	*240 ml.*	*300 ml.*	*680 ml.*	*2,420 ml.*
1 hr. 30 min.	*7,500 ml.*	*1,420 ml.*	*400 ml.*	*520 ml.*	*1,250 ml.*	*4,200 ml.*
2 hr.	*10,800 ml.*	*1,530 ml.*	*540 ml.*	*780 ml.*	*1,920 ml.*	*6,000 ml.*
2 hr. 30 min.	*13,000 ml.*	*1,650 ml.*	*680 ml.*	*1,240 ml.*	*2,660 ml.*	*7,800 ml.*
3 hr.	*17,000 ml.*	*1,750 ml.*	*840 ml.*	*2,120 ml.*	*3,460 ml.*	*9,800 ml.*
3 hr. 30 min.	*18,900 ml.*	*1,890 ml.*	*1,020 ml.*	*2,880 ml.*	*4,270 ml.*	*11,420 ml.*
4 hr.	*23,000 ml.*	*2,080 ml.*	*1,180 ml.*	*3,780 ml.*	*5,095 ml.*	*13,320 ml.*

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TABLE H.2: MODIFIED ASTM E-514 TEST
PANEL B

TIME ELAPSED	Test No.1	Test No.2	Test No. 3	Test No.4	Test No.5	Test No.6
30 min.	*7,000 ml.*	*0 ml.*	*0 ml.*	*0 ml.*	*0 ml.*	*0 ml.*
1 hr.	*14,000 ml.*	*25 ml.*	*0 ml.*	*0 ml.*	*50 ml.*	*30 ml.*
1 hr. 30 min.	*20,000 ml.*	*35 ml.*	*0 ml.*	*0 ml.*	----	*110 ml.*
2 hr.	*27,000 ml.*	*40 ml.*	*0 ml.*	*0 ml.*	*220 ml.*	*220 ml.*
2 hr. 30 min.	*33,000 ml.*	*40 ml.*	*45 ml.*	*0 ml.*	----	*340 ml.*
3 hr.	*40,000 ml.*	*40 ml.*	*95 ml.*	*0 ml.*	*425 ml.*	*420 ml.*
3 hr. 30 min.	*46,000 ml.*	*40 ml.*	----	*0 ml.*	----	*580 ml.*
4 hr.	*52,500 ml.*	*40 ml.*	*305 ml.*	*0 ml.*	*650 ml.*	*740 ml.*

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TABLE H.3: MODIFIED ASTM E-514 TEST
PANEL C

TIME ELAPSED	Test No.1	Test No.2	Test No. 3	Test No.4	Test No.5	Test No.6
30 min.	*7,000 ml.*	*170 ml.*	*0 ml.*	*0 ml.*	*0 ml.*	*0 ml.*
1 hr.	*12,500 ml*	*1,930 ml.*	*0 ml.*	*0 ml.*	*0 ml.*	*30 ml.*
1 hr. 30 min.	*18,300 ml.*	*5,010 ml.*	*0 ml.*	*0 ml.*	*0 ml.*	*120 ml.*
2 hr.	*26,000 ml.*	*8,510 ml.*	*0 ml.*	*0 ml.*	*0 ml.*	*1,170 ml.*
2 hr. 30 min.	*30,600 ml.*	*12,280 ml.*	*0 ml.*	*0 ml.*	*0 ml.*	*2,900 ml.*
3 hr.	*39,600 ml.*	*16,420 ml.*	*10 ml.*	*60 ml.*	*0 ml.*	*5,100 ml.*
3 hr. 30 min.	*43,900 ml.*	*20,660 ml.*	*30 ml.*	*110 ml.*	*225 ml.*	*7,630 ml.*
4 hr.	*52,600 ml.*	*24,860 ml.*	*70 ml.*	*185 ml.*	*450 ml.*	*9,630 ml.*

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TABLE H.4: MODIFIED ASTM E-514 TEST
PANEL D

TIME ELAPSED	Test No.1	Test No.2	Test No. 3	Test No.4	Test No.5	Test No.6
30 min.	*8,750 ml.*	*580 ml.*	*2,920 ml.*	*1,200 ml.*	*2,000 ml.*	*1,510 ml.*
1 hr.	*16,000 ml*	*1,930 ml.*	*7,500 ml.*	*3,200 ml.*	*4,330 ml.*	*3,450 ml.*
1 hr. 30 min.	*21,500 ml.*	*3,850 ml.*	*12,740 ml.*	*5,500 ml.*	----	*6,280 ml.*
2 hr.	*30,000 ml.*	*5,710 ml.*	*18,420 ml.*	*8,200 ml.*	*10,300 ml.*	*9,510 ml.*
2 hr. 30 min.	*37,000 ml.*	*8,410 ml.*	*24,520 ml.*	*10,900 ml.*	----	*12,840 ml.*
3 hr.	*44,000 ml.*	*10,300 ml.*	*31,620 ml.*	*13,700 ml.*	*17,130 ml.*	*16,150 ml.*
3 hr. 30 min.	*49,000 ml.*	*12,680 ml.*	*38,820 ml.*	*16,700 ml.*	----	*19,790 ml.*
4 hr.	*57,800 ml.*	*16,740 ml.*	*44,620 ml.*	*19,600 ml.*	*24,380 ml.*	*23,550 ml.*

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TABLE H.5: MODIFIED ASTM E-514 TEST
PANEL E

TIME ELAPSED	Test No.1	Test No.2	Test No. 3	Test No.4	Test No.5	Test No.6
30 min.	*4,750 ml.*	*400 ml.*	*740 ml.*	*400 ml.*	*600 ml.*	*580 ml.*
1 hr.	*8,500 ml*	*1,020 ml.*	*1,780 ml.*	*1,080 ml.*	*1,650 ml.*	*1,680 ml.*
1 hr. 30 min.	*11,500 ml.*	*1,660 ml.*	*3,020 ml.*	*2,040 ml.*	*2,730 ml.*	*3,290 ml.*
2 hr.	*15,750 ml.*	*2,410 ml.*	*4,280 ml.*	*3,640 ml.*	*3,805 ml.*	*4,790 ml.*
2 hr. 30 min.	*18,000 ml.*	*3,360 ml.*	*5,620 ml.*	*4,840 ml.*	*4,985 ml.*	*6,340 ml.*
3 hr.	*22,500 ml.*	*4,390 ml.*	*7,000 ml.*	*6,200 ml.*	*6,235 ml.*	*7,640 ml.*
3 hr. 30 min.	*24,200 ml.*	*5,500 ml.*	*8,440 ml.*	*7,020 ml.*	*7,515 ml.*	*9,470 ml.*
4 hr.	*29,500 ml.*	*6,750 ml.*	*9,820 ml.*	*8,220 ml.*	*8,815 ml.*	*10,970 ml.*

TABLE H.6: MODIFIED ASTM E-514 TEST
PANEL F

TIME ELAPSED	Test No.1	Test No.2	Test No. 3	Test No.4	Test No.5	Test No.6
30 min.	*4,250 ml.*	*5,000 ml.*	*7,100 ml.*	*5,000 ml.*	*3000 ml.*	*5,340 ml.*
1 hr.	*9,250 ml.*	*11,000 ml.*	*13,660 ml.*	*10,000 ml.*	*6,120 ml.*	*10,690 ml.*
1 hr. 30 min.	*13,500 ml.*	*17,300 ml.*	*21,380 ml.*	*14,800 ml.*	----	*15,810 ml.*
2 hr.	*20,000 ml.*	*23,700 ml.*	*28,580 ml.*	*20,000 ml.*	*14,920 ml.*	*20,710 ml.*
2 hr. 30 min.	*25,000 ml.*	*31,500 ml.*	*35,580 ml.*	*25,000 ml.*	----	*25,760 ml.*
3 hr.	*30,000 ml.*	*37,220 ml.*	*43,120 ml.*	*30,000 ml.*	*23,920 ml.*	*30,530 ml.*
3 hr. 30 min.	*36,000 ml.*	*42,840 ml.*	*50,120 ml.*	*35,000 ml.*	----	*35,180 ml.*
4 hr.	*38,800 ml.*	*52,840 ml.*	*56,740 ml.*	*39,900 ml.*	*33,170 ml.*	*39,510 ml.*

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APPENDIX I: WATER UPTAKE TUBE TEST CURVES

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Figure I.1:
Water Uptake Test on Mortar Joint
Panel A : Location 1

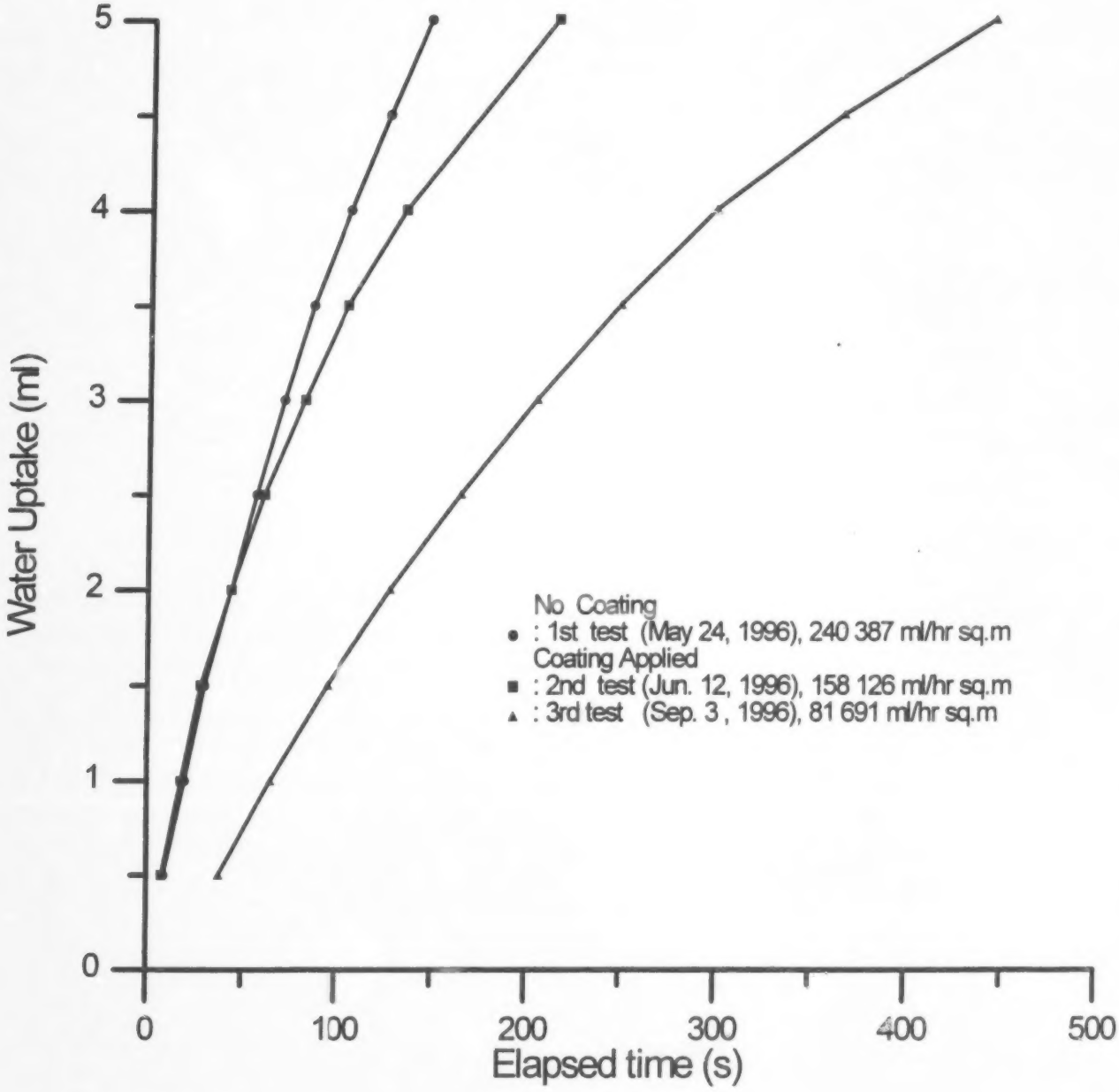

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Figure I.2:
Water Uptake Test on Mortar Joint
Panel B : Location 1

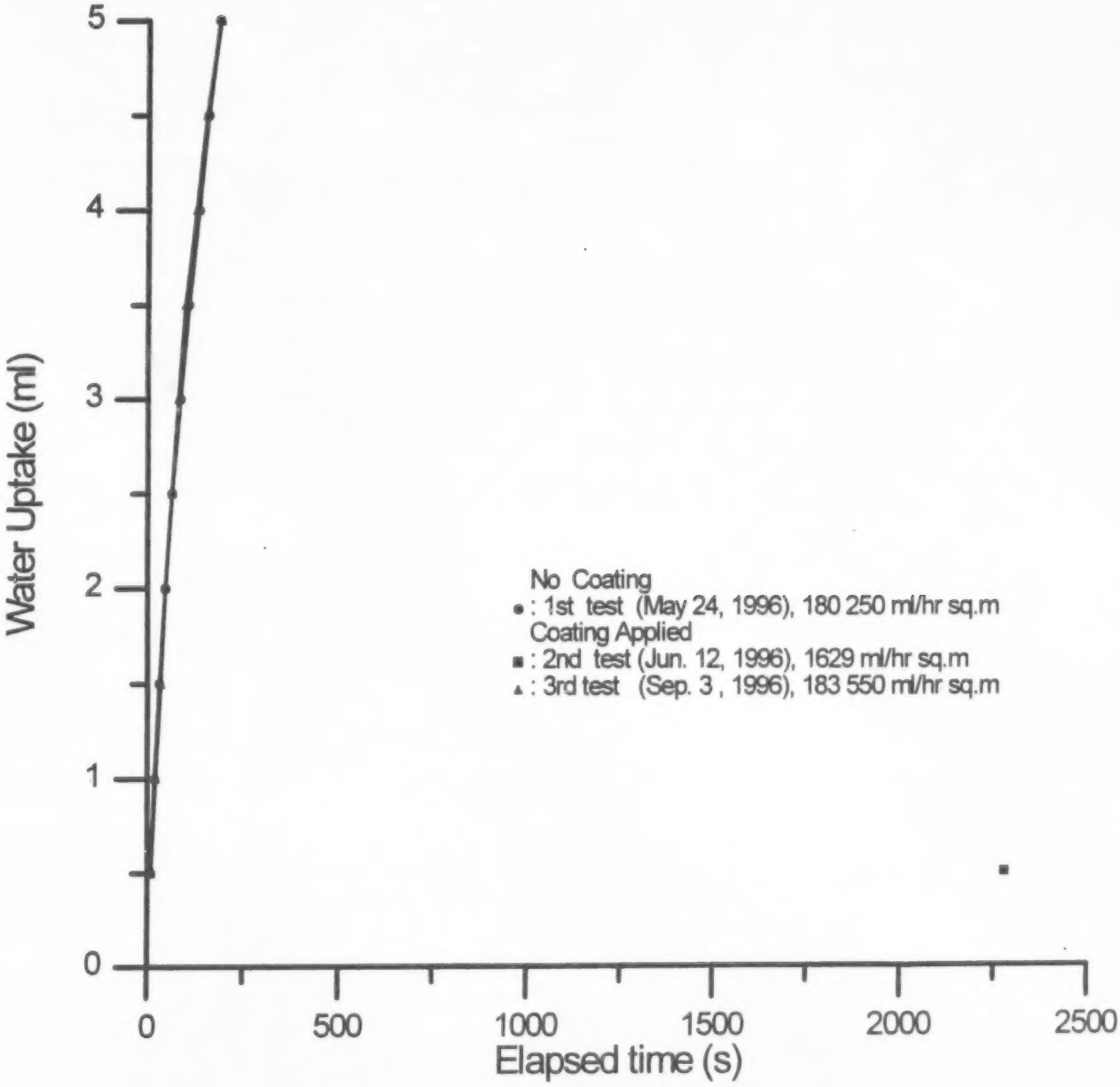

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Figure I.3:
Water Uptake Test on Mortar Joint
Panel B : Location 2

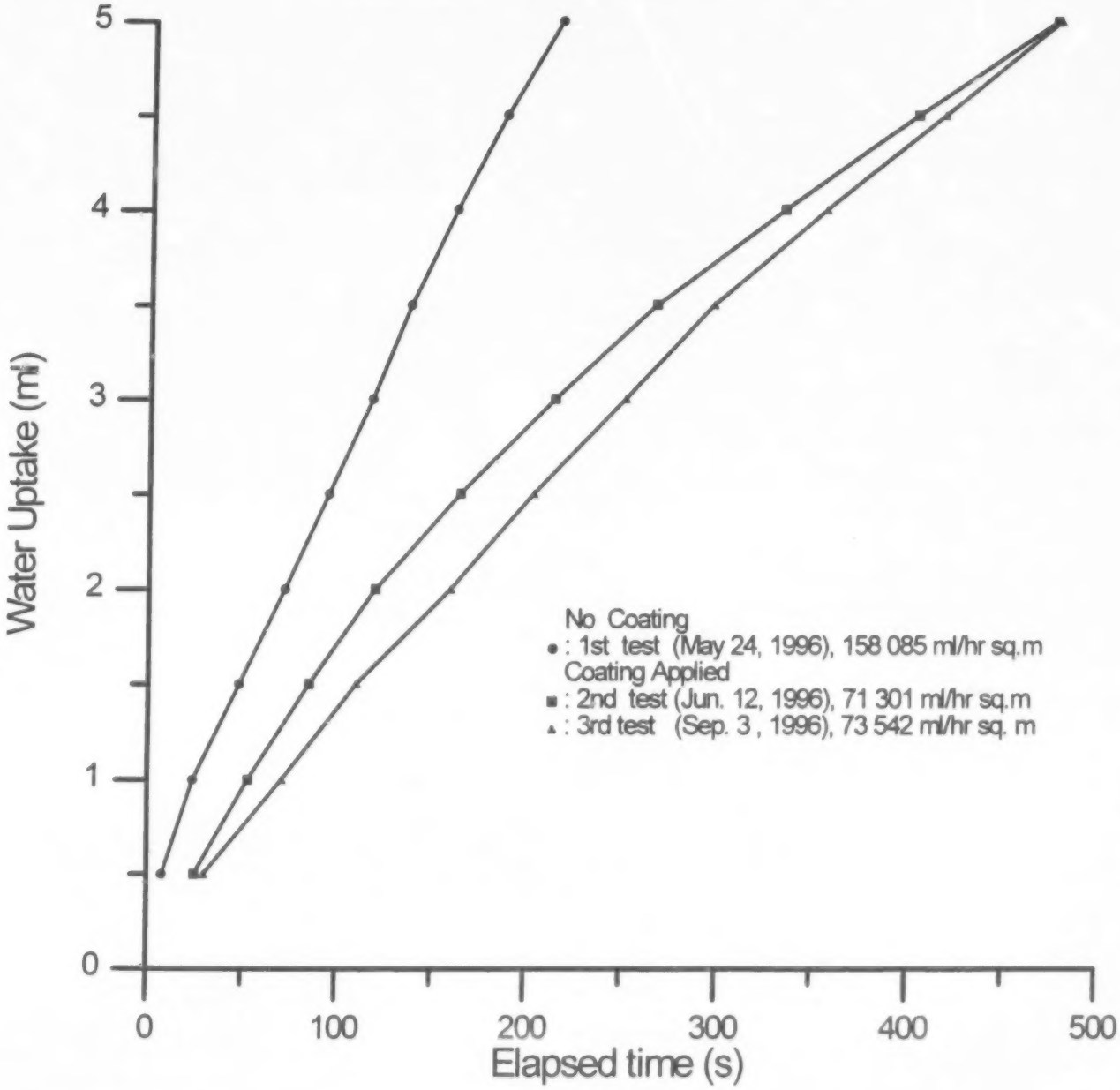

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Figure I.4:
Water Uptake Test on Mortar Joint
Panel C : Location 2

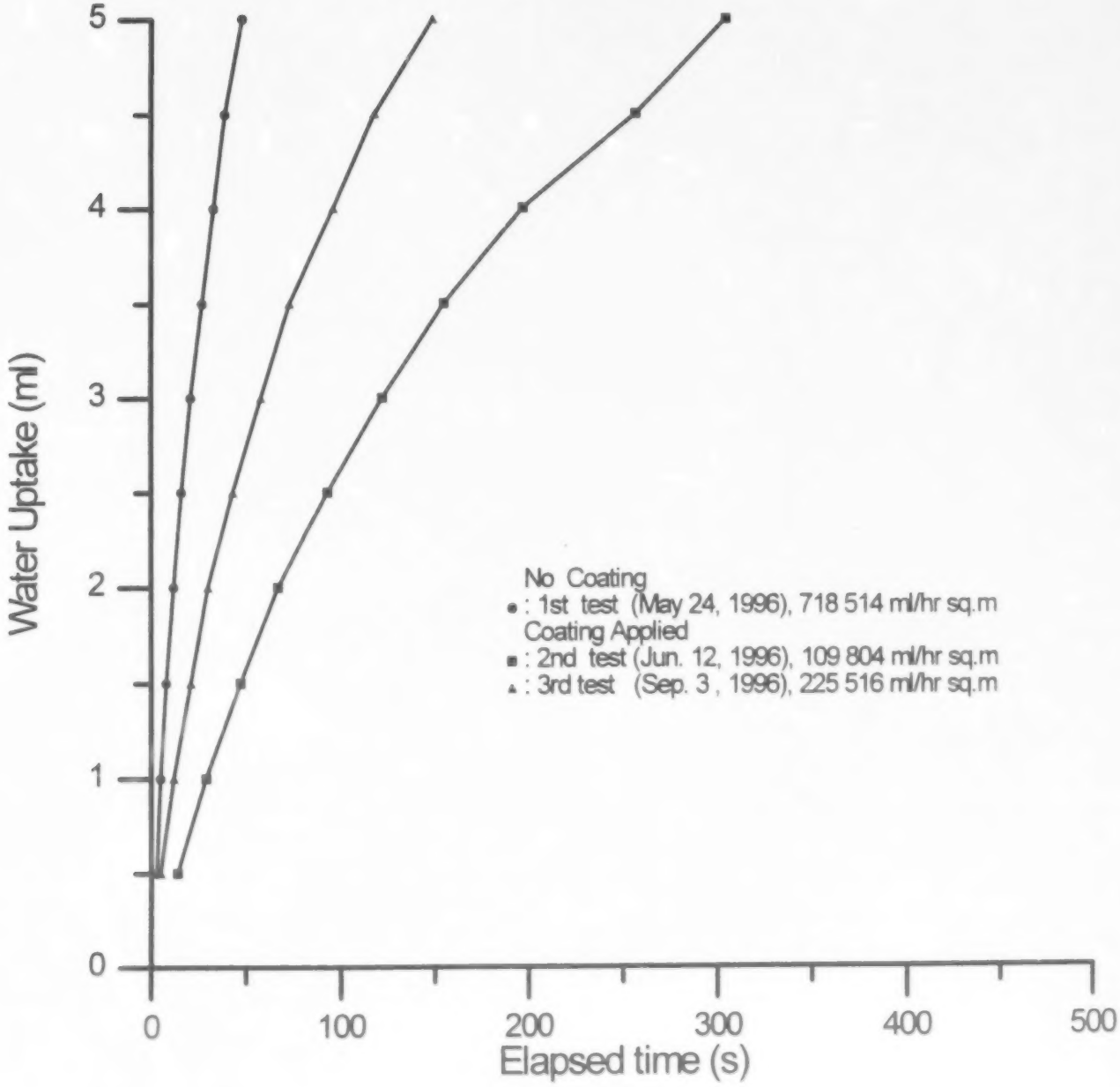

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Figure I.5:
Water Uptake Test on Mortar Joint
Panel D : Location 2

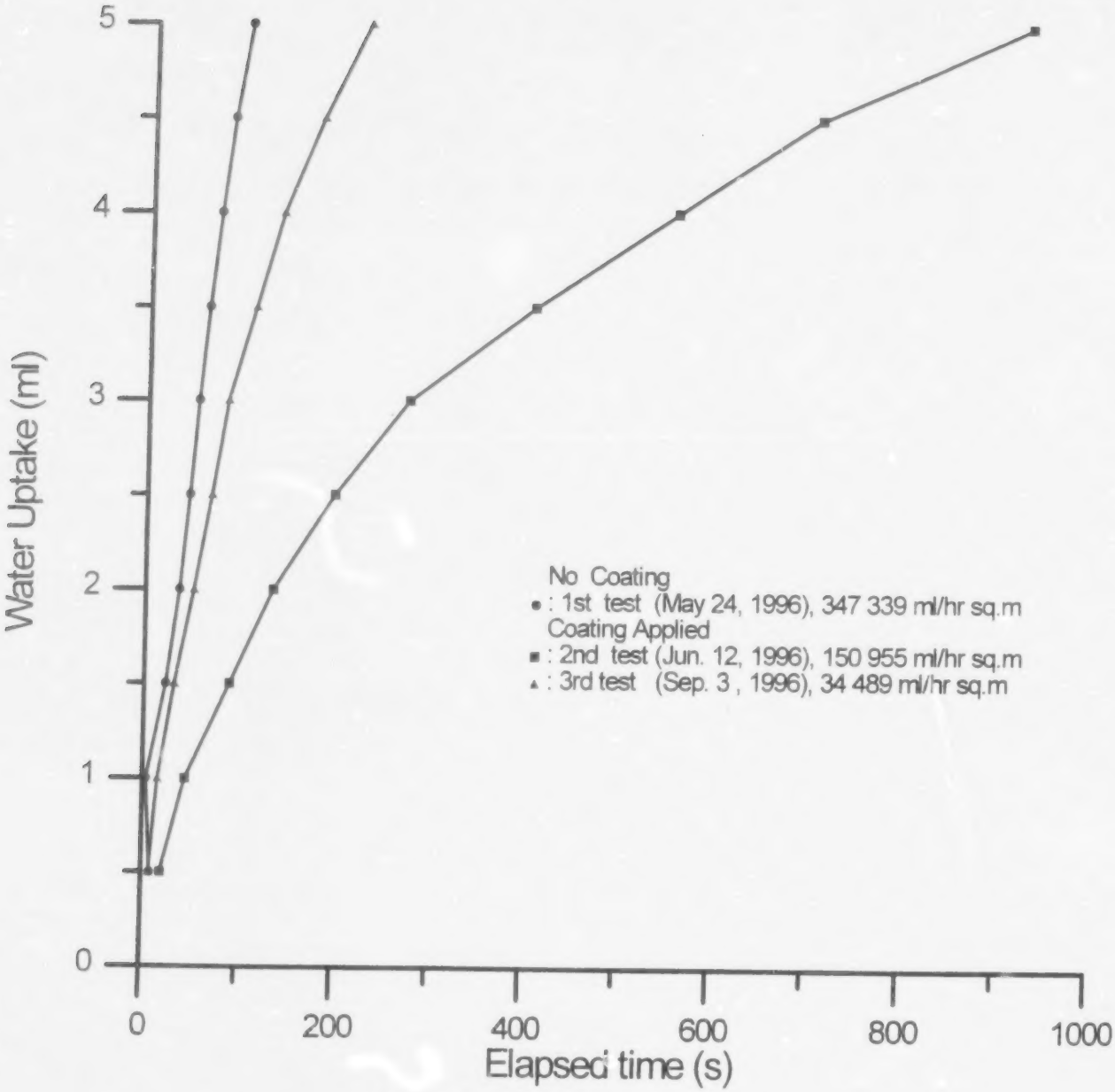

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Figure I.6:
Water Uptake Test on Mortar Joint
Panel E : Location 2

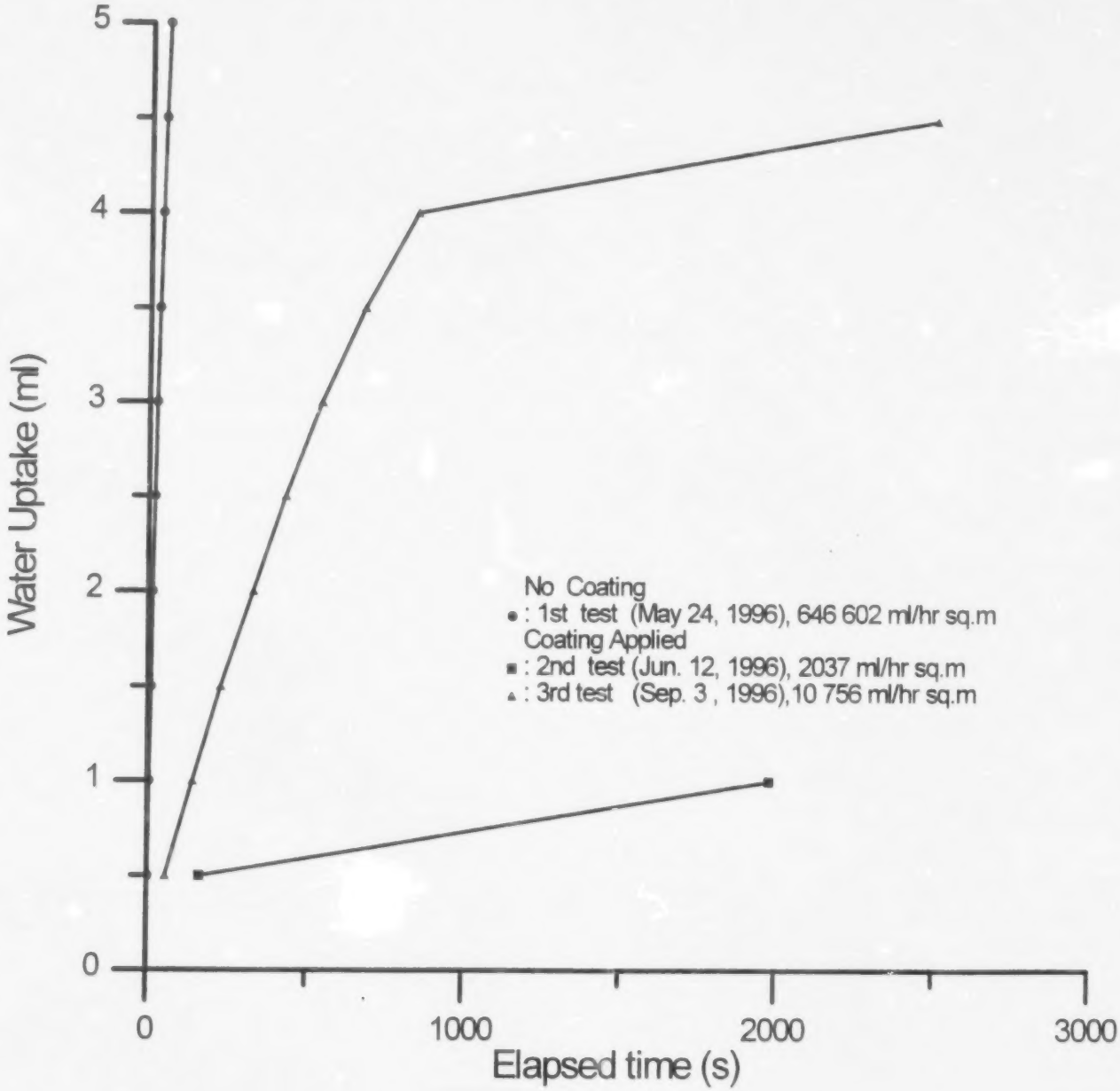

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Figure I.7:
Water Uptake Test on Mortar Joint
Panel F : Location 1

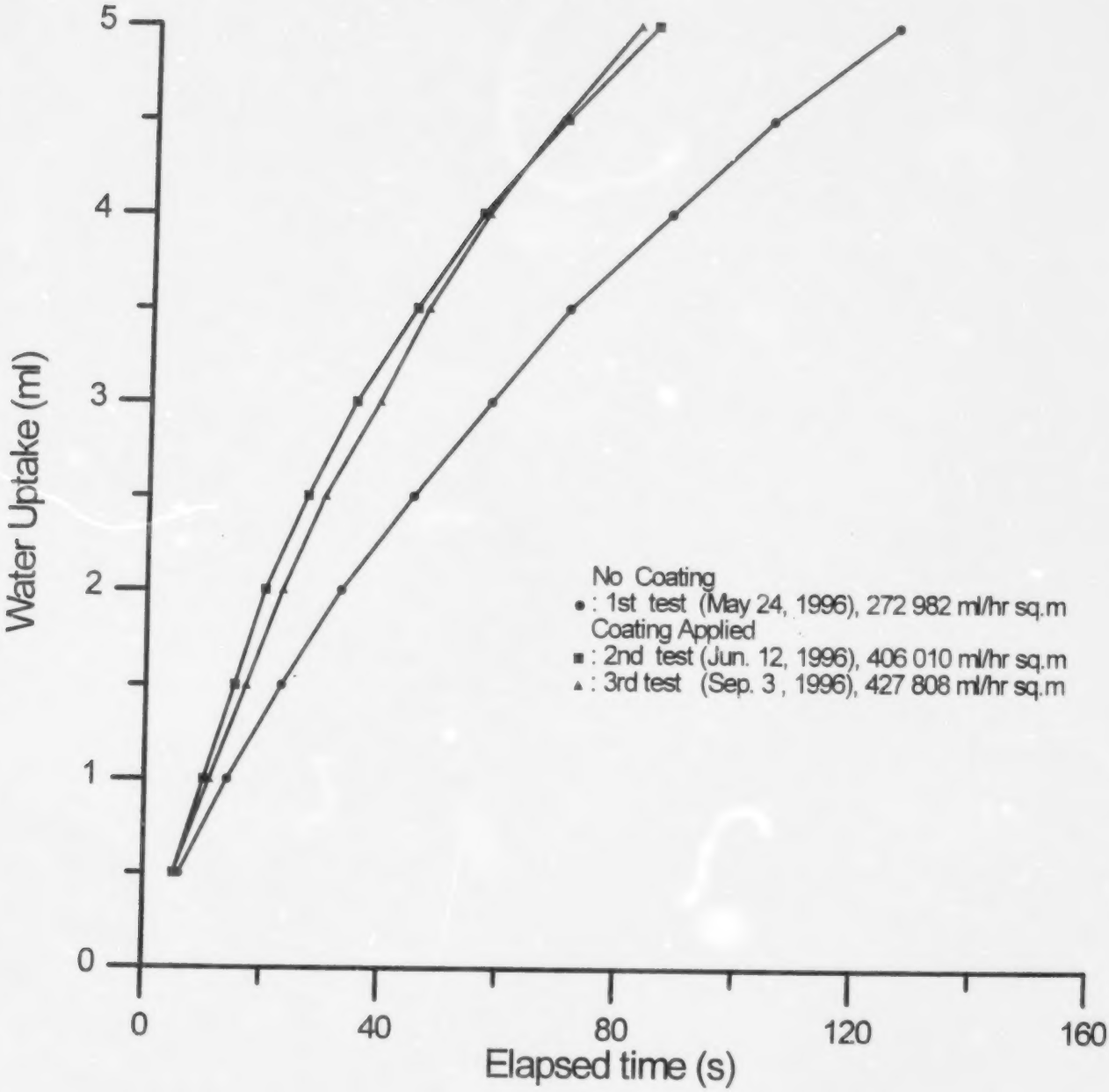

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Figure I.8:
Water Uptake Test on Brick Face
Panel A : Location 3

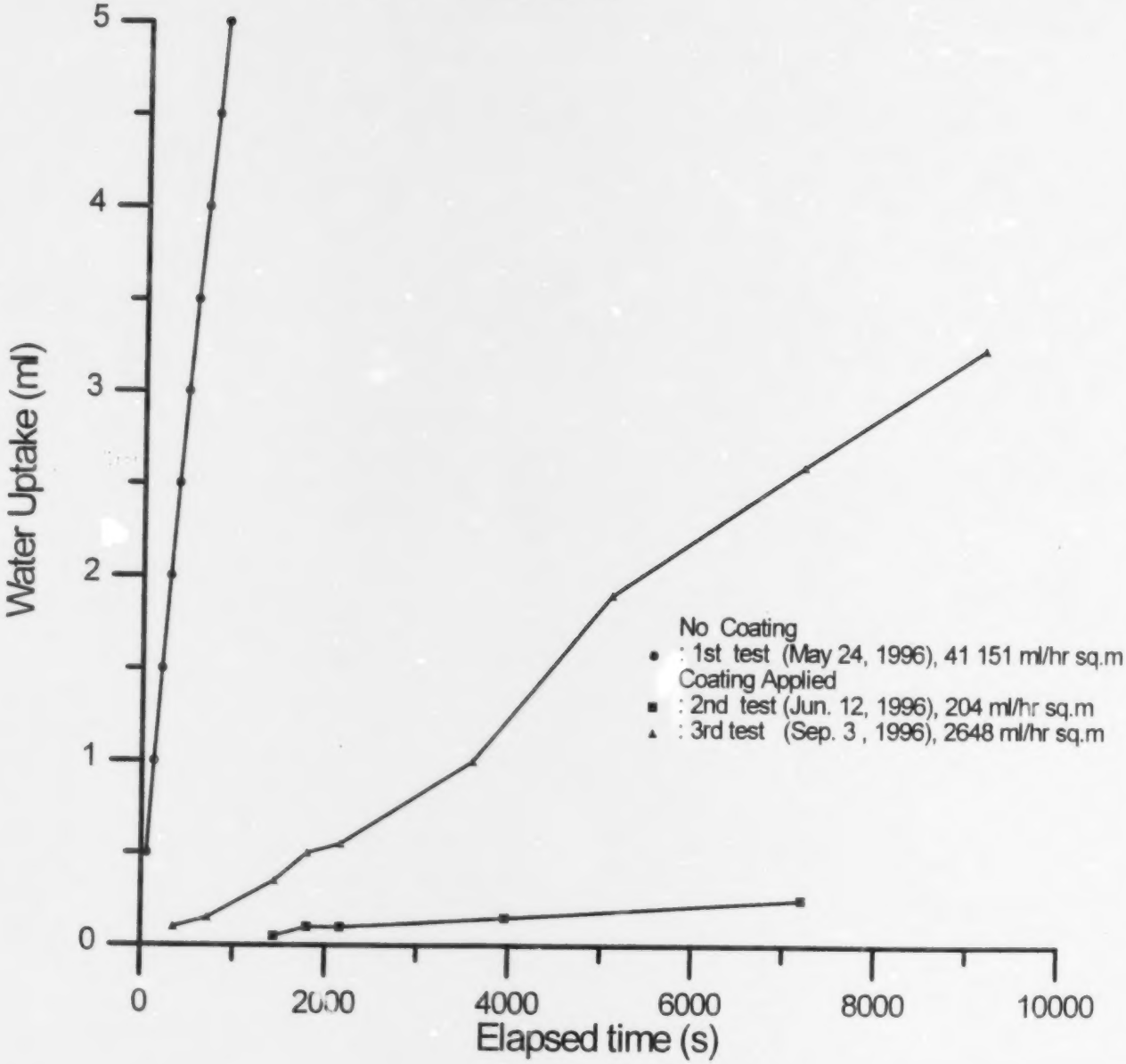

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Figure I.9:
Water Uptake Test on Brick Face
Panel A : Location 4

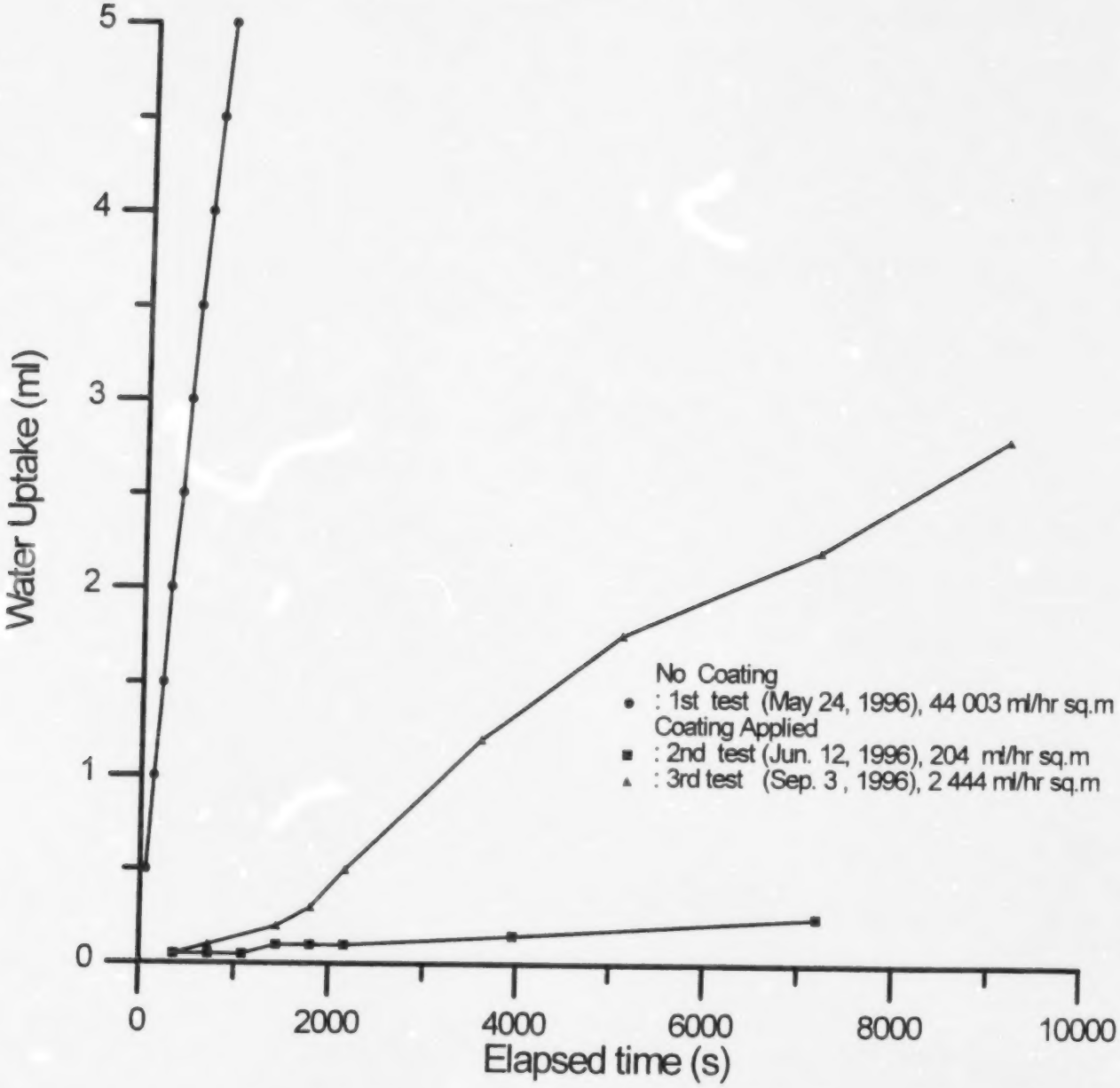

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Figure I.10:
Water Uptake Test on Brick Face
Panel B : Location 3

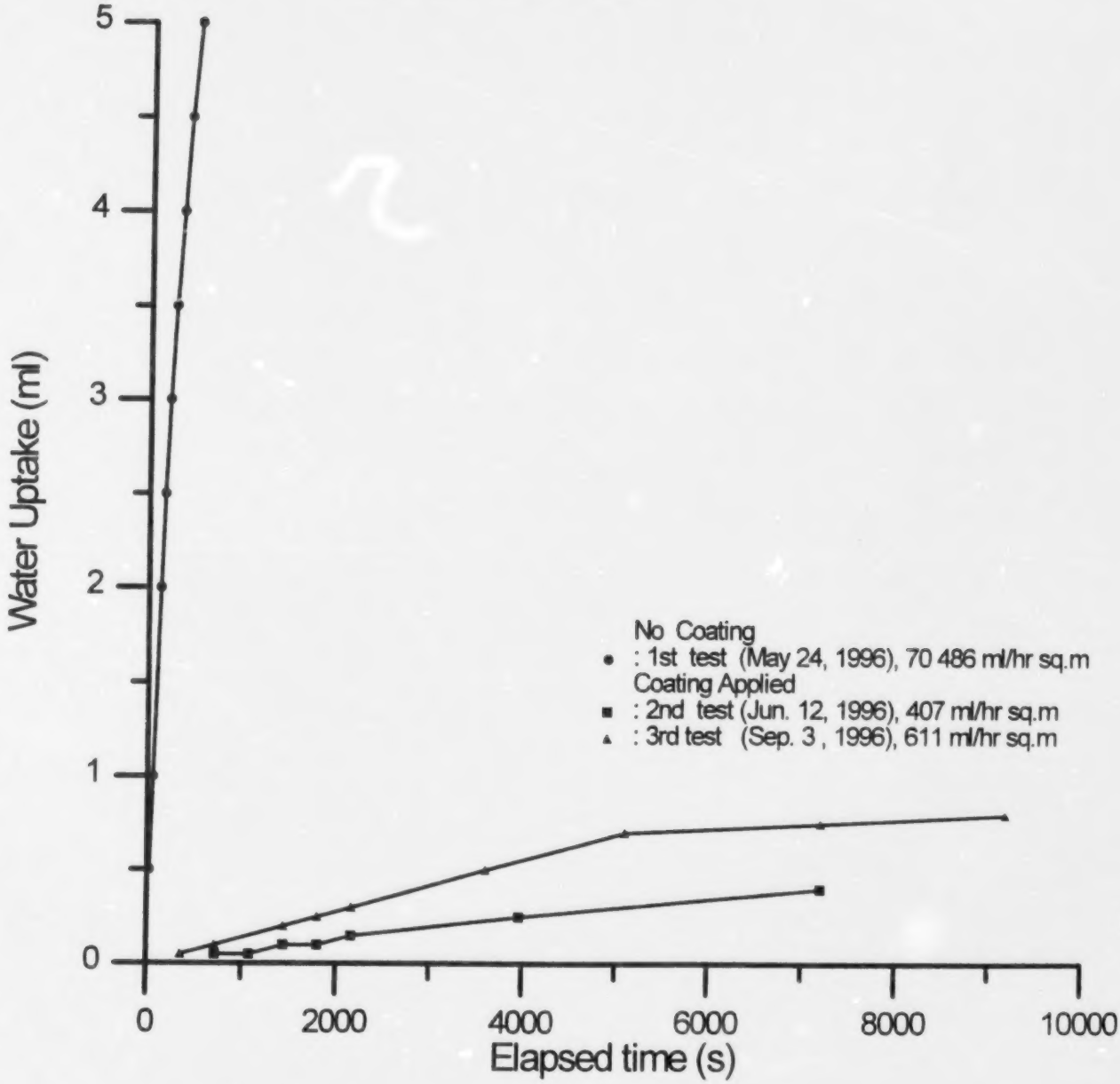

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Figure I.11:
Water Uptake Test on Brick Face
Panel B : Location 4

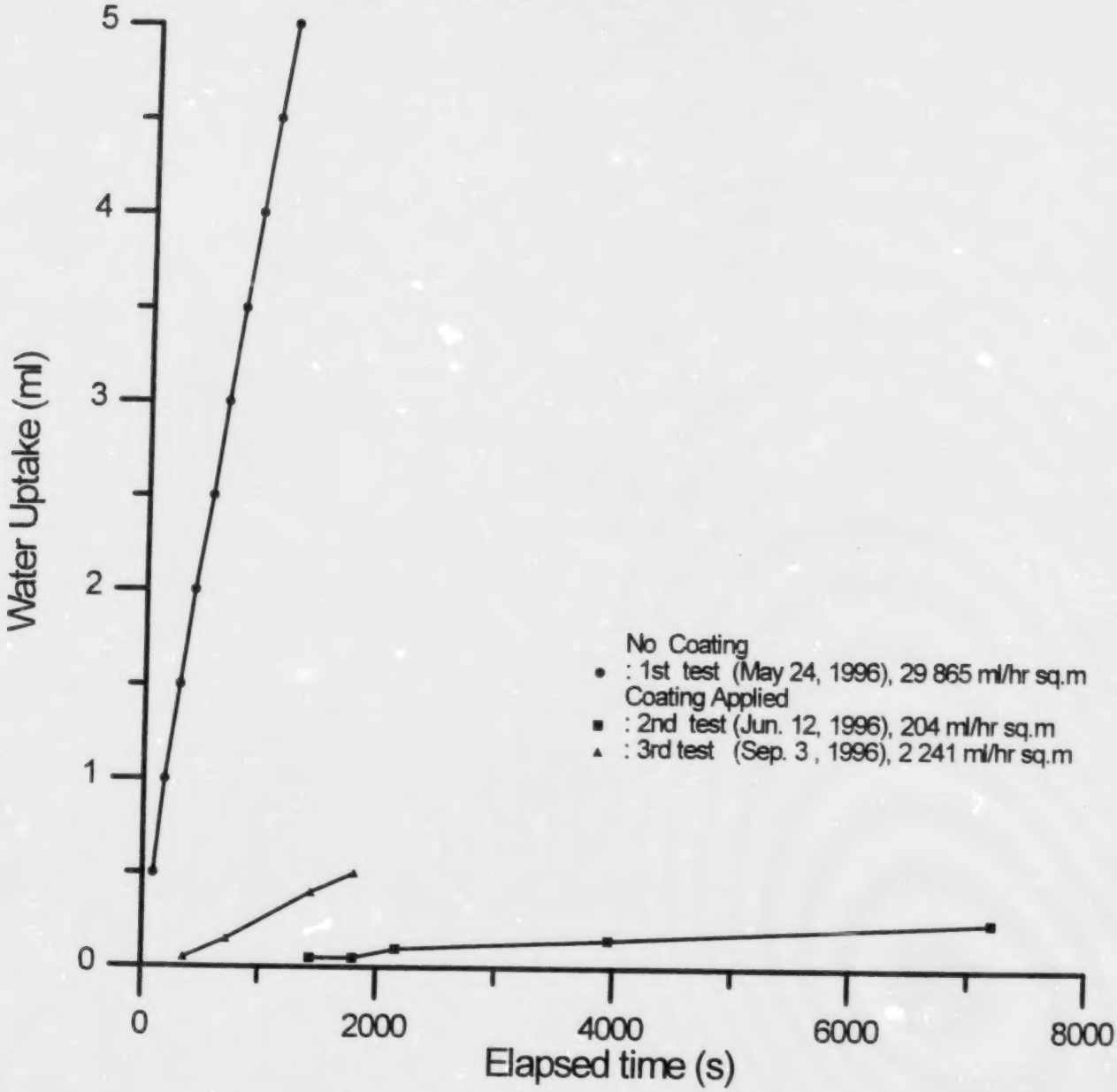

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Figure I.12:
Water Uptake Test on Brick Face
Panel C : Location 3

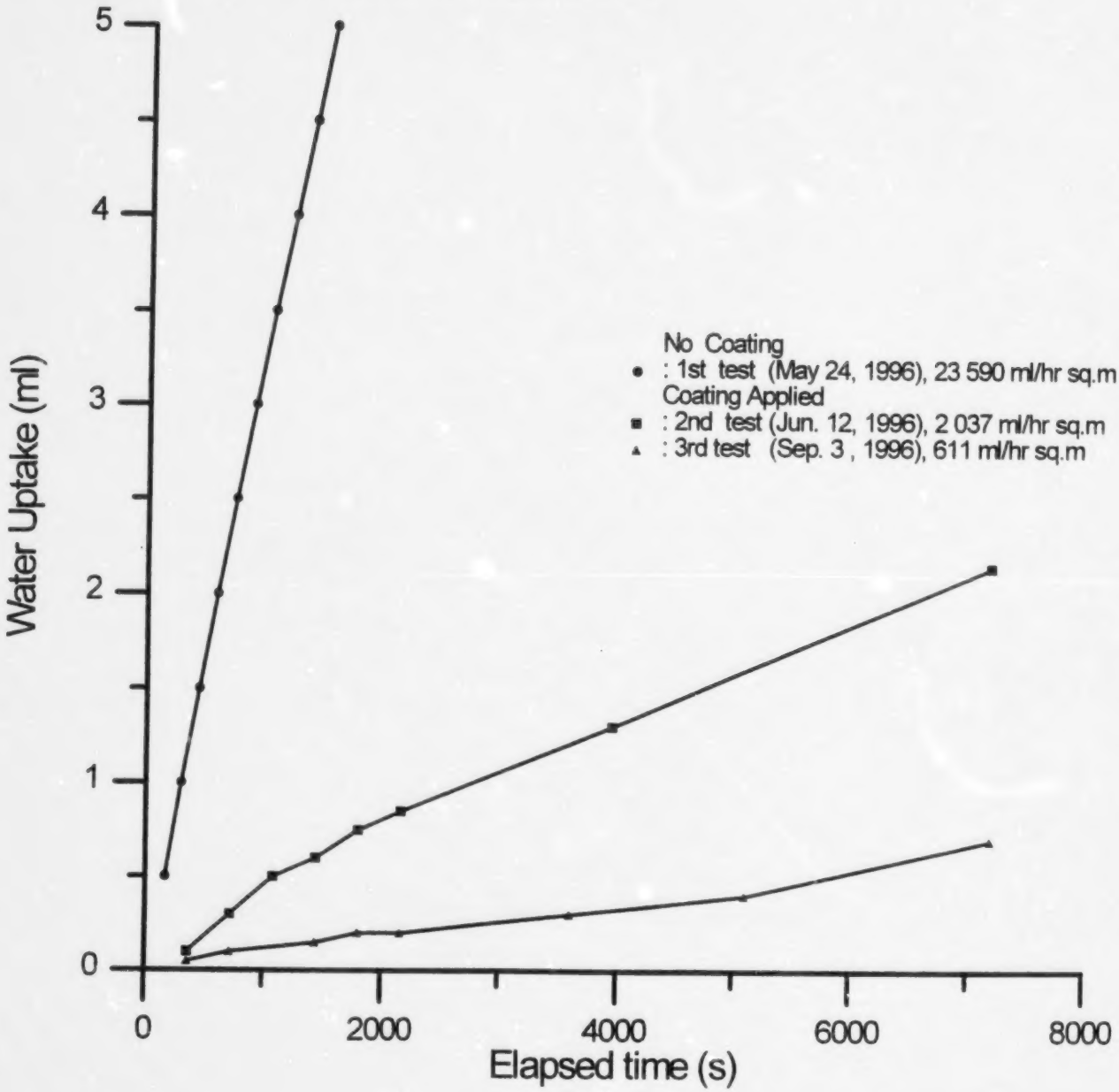

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Figure I.13:
Water Uptake Test on Brick Face
Panel C : Location 4

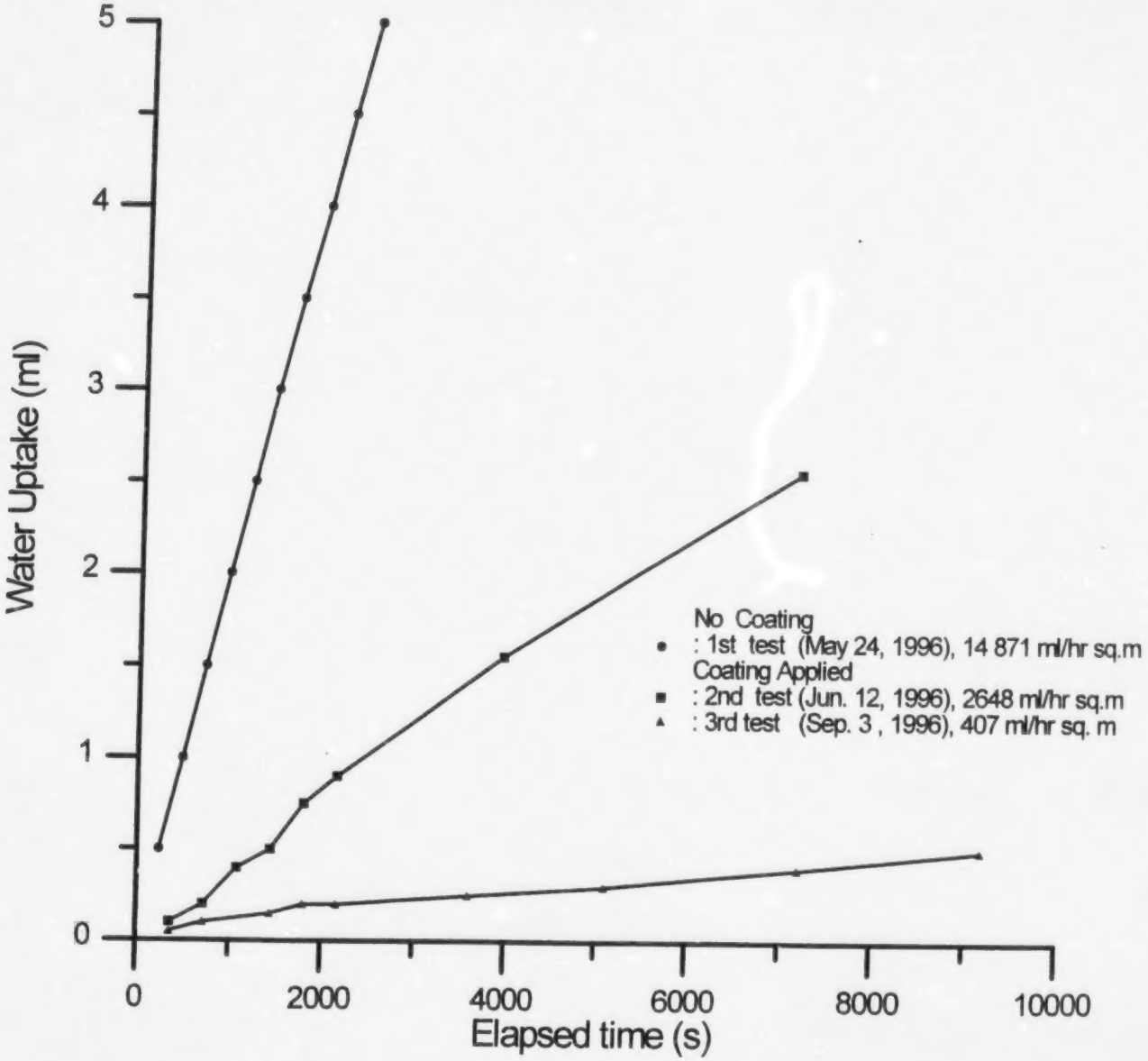

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Figure I.14:
Water Uptake Test on Brick Face
Panel D : Location 3

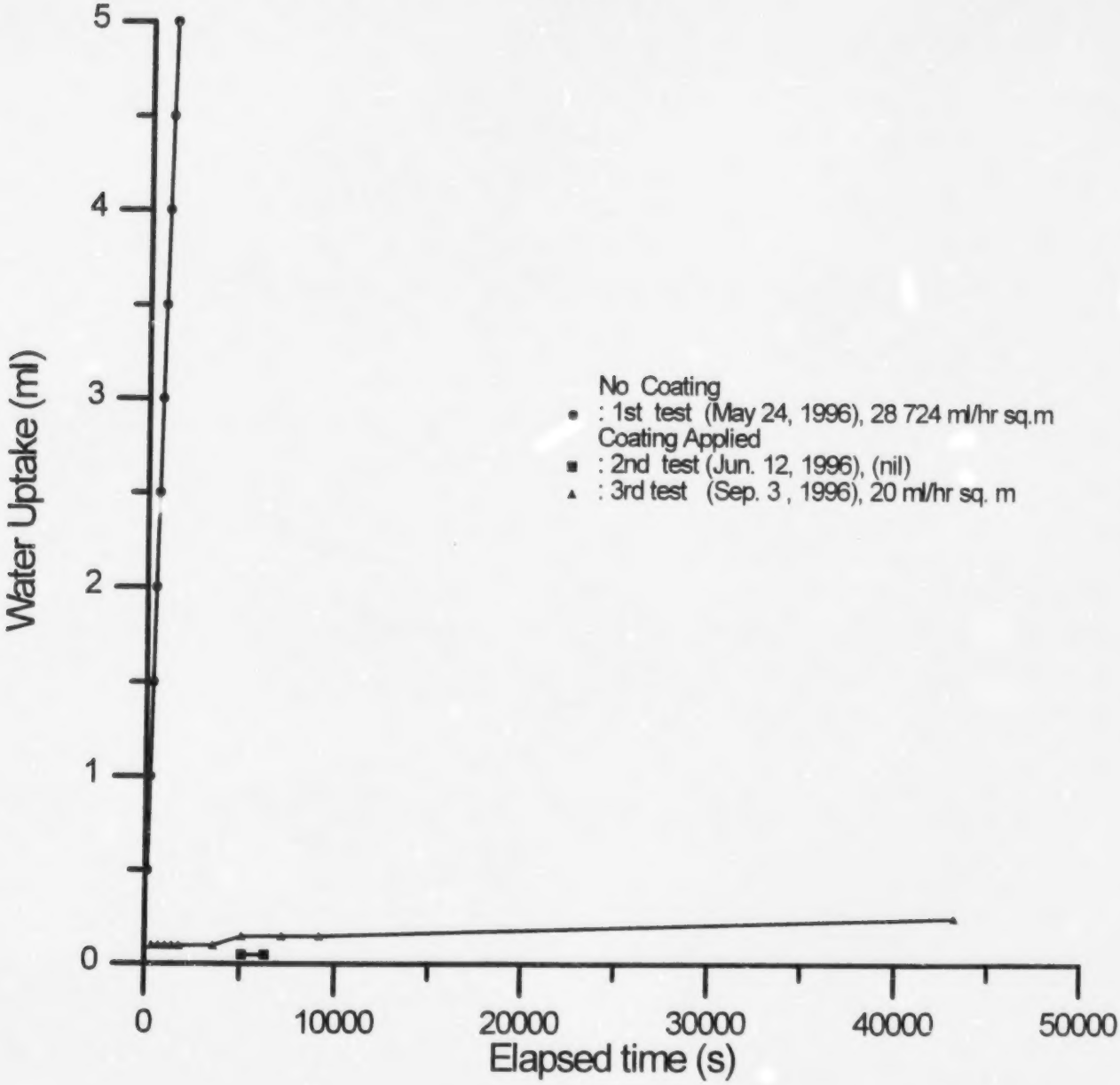

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Figure I.15:
Water Uptake Test on Brick Face
Panel D : Location 4

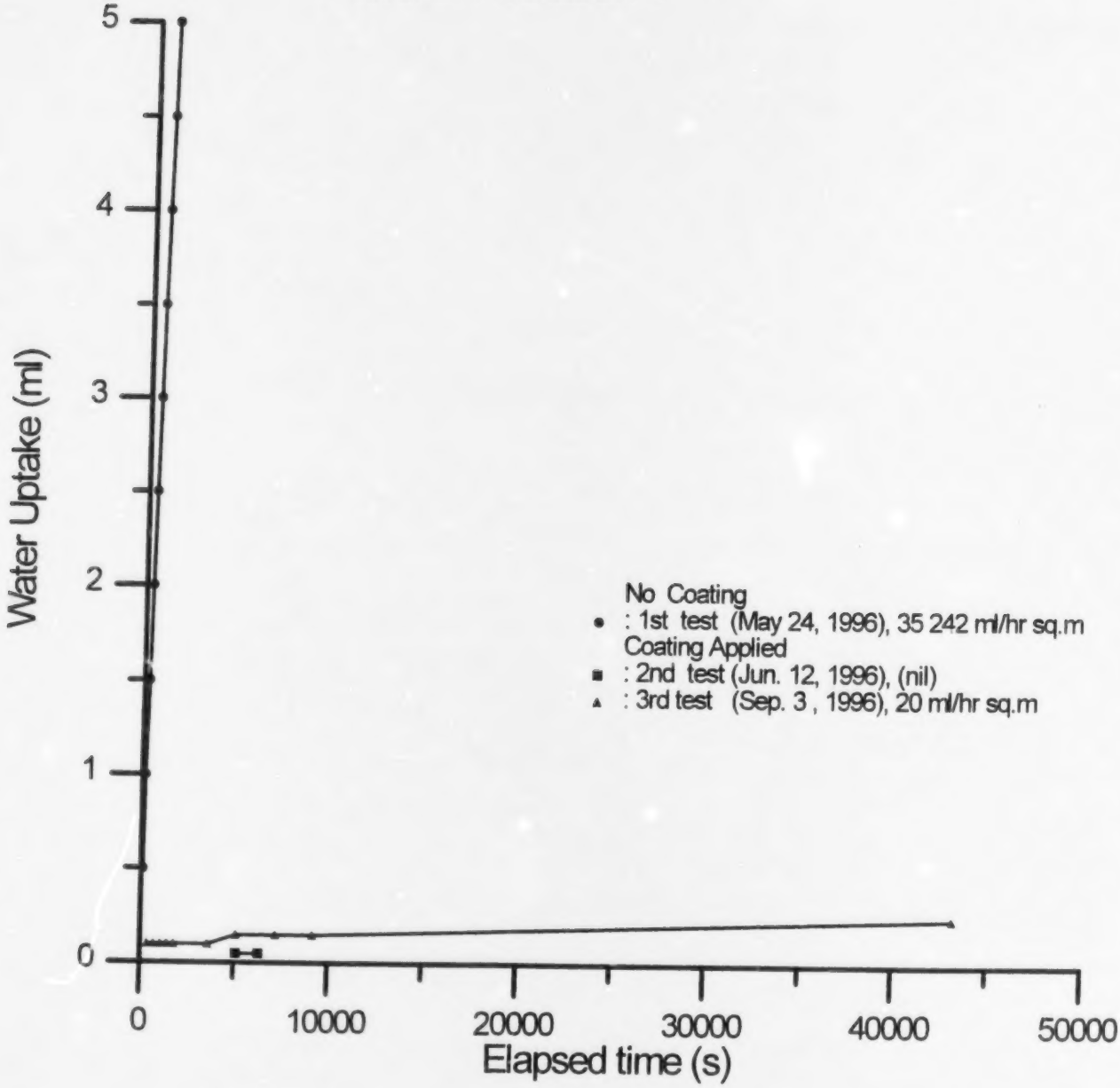

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Figure I.16:
Water Uptake Test on Brick Face
Panel E : Location 3

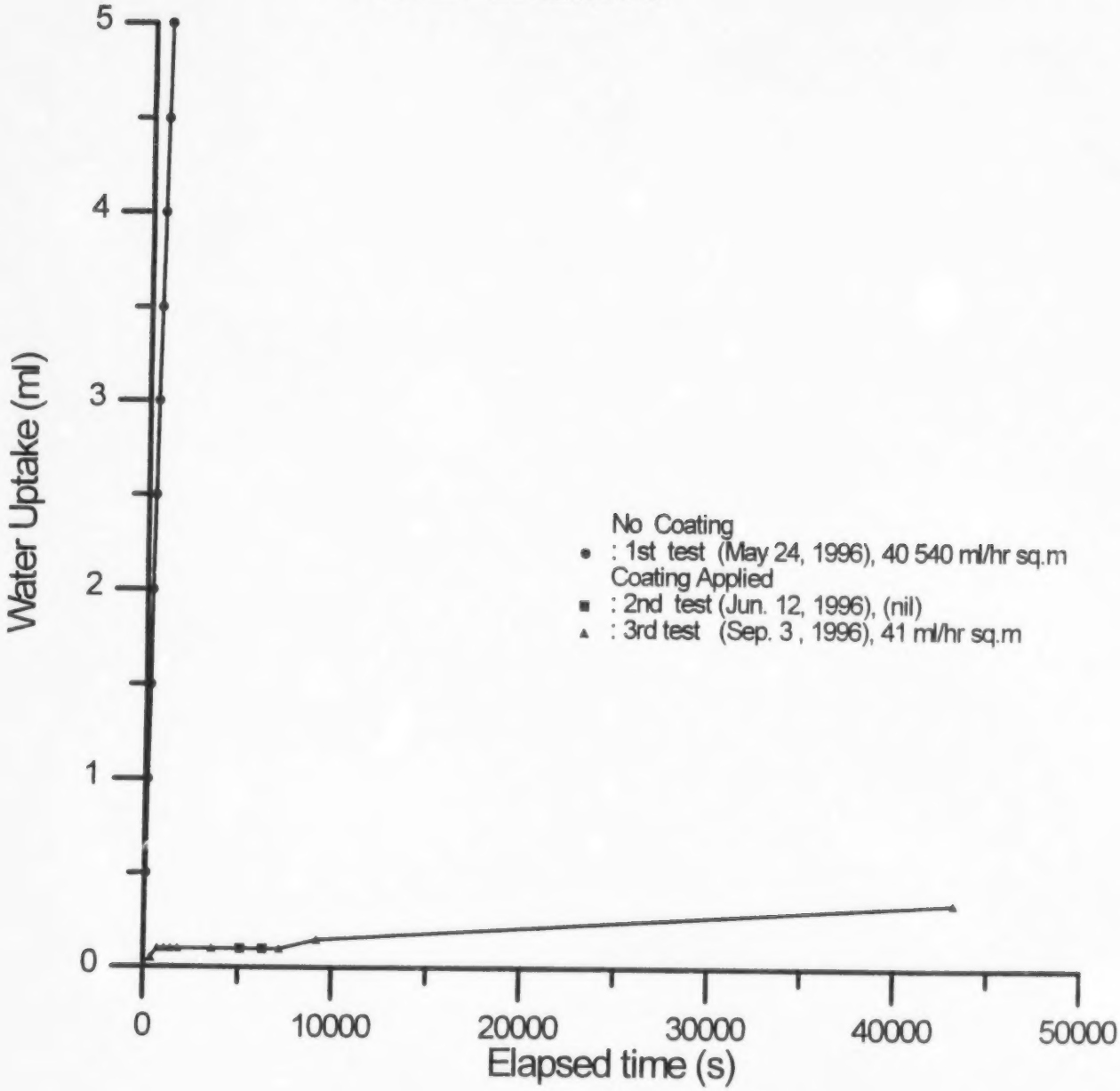

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Figure I.17:
Water Uptake Test on Brick Face
Panel E : Location 4

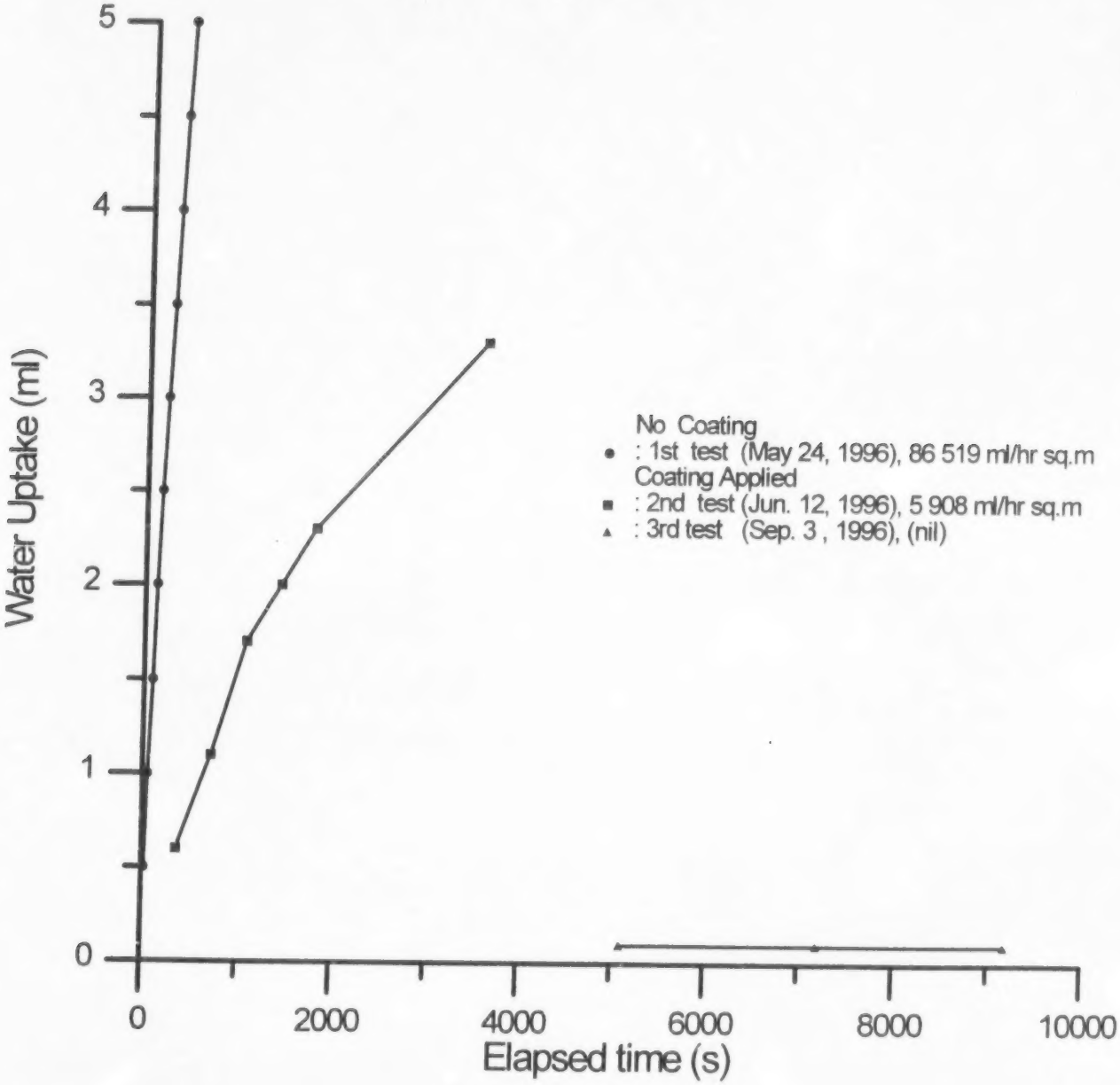

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Figure I.18:
Water Uptake Test on Brick Face
Panel F : Location 3

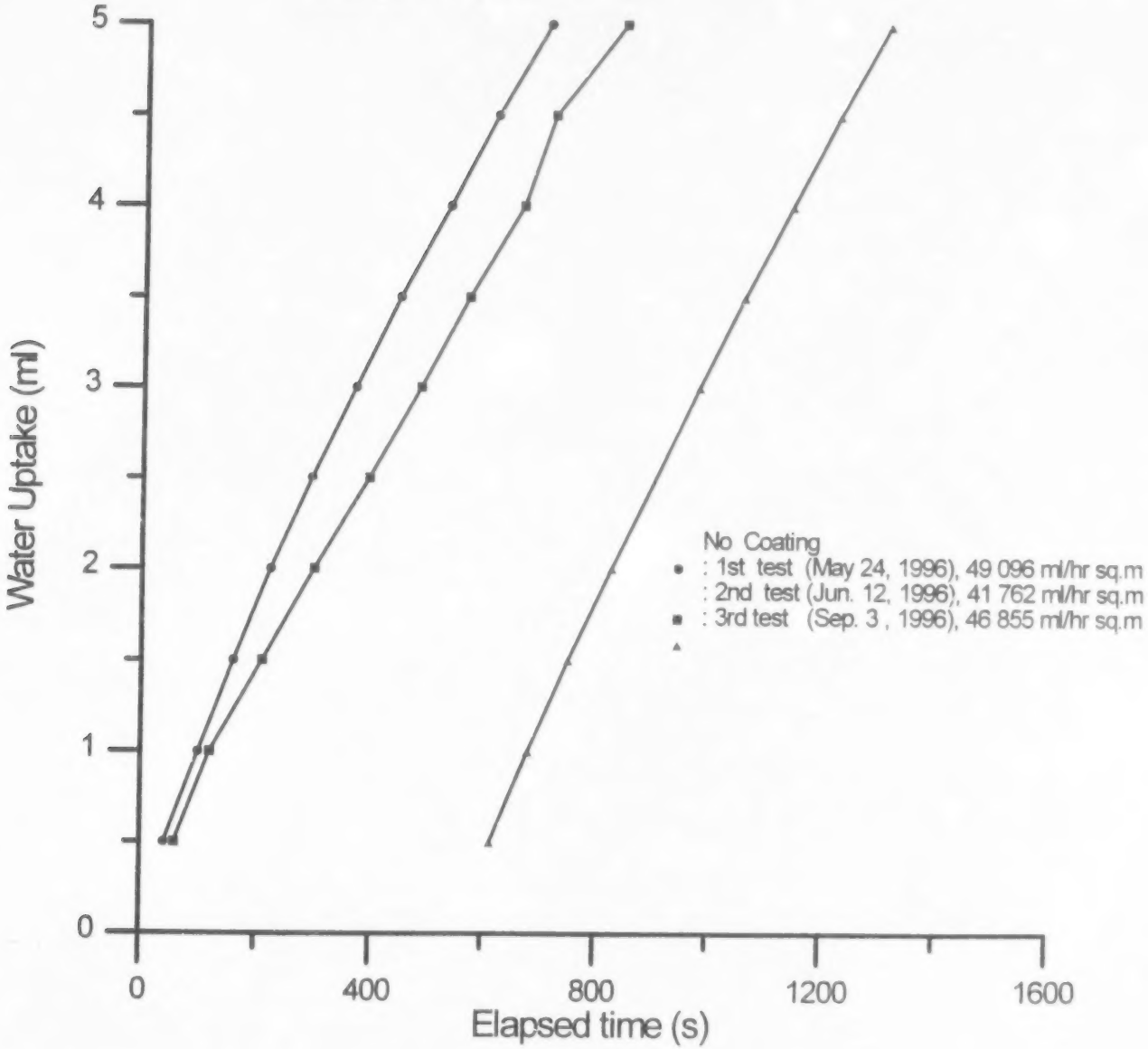

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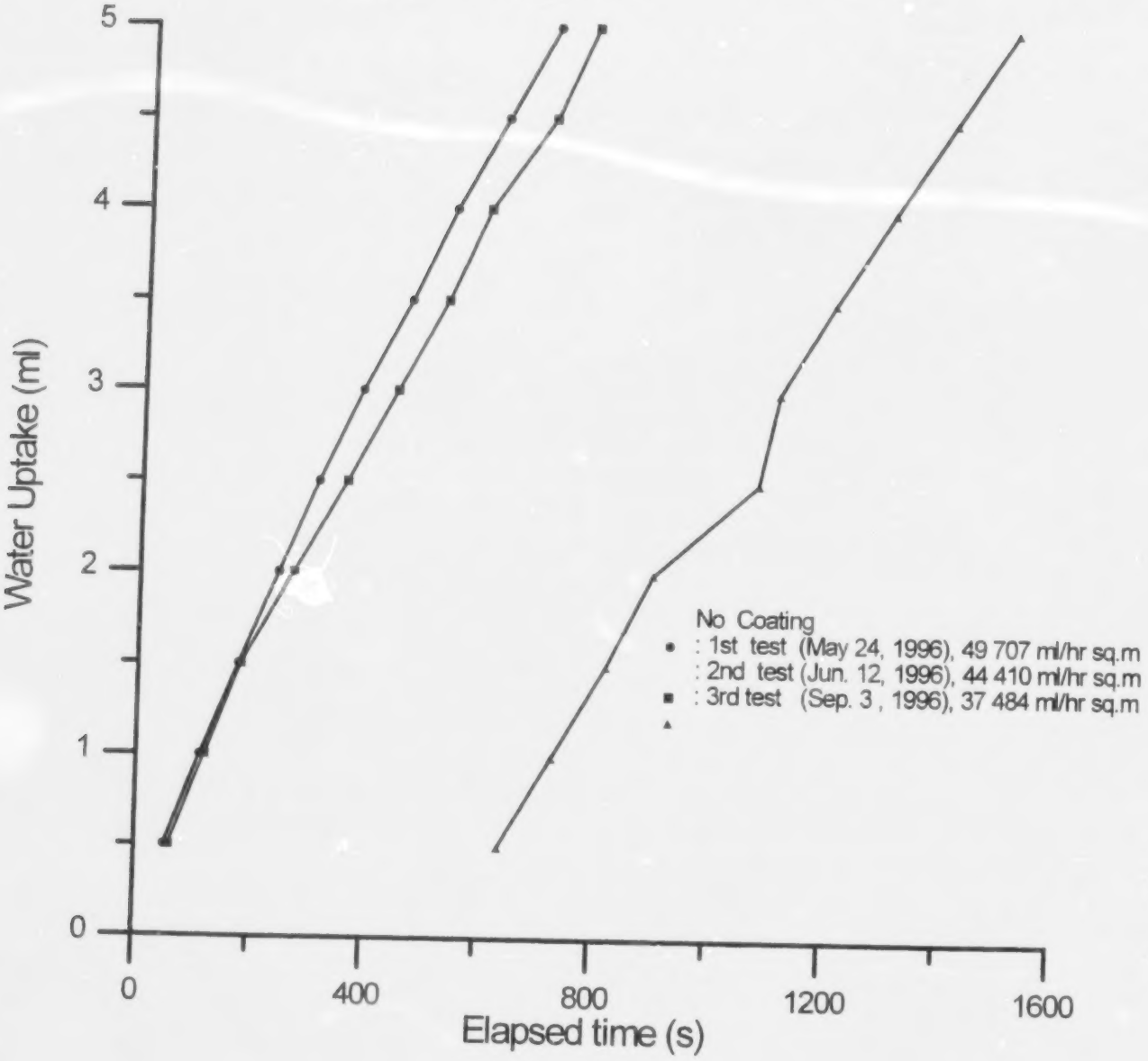
Figure I.19:
Water Uptake Test on Brick Face
Panel F : Location 4



APPENDIX J: WATER UPTAKE TUBE TEST EXPERIMENTAL DATA

TABLE J.1: WATER UPTAKE TUBE TEST
TEST No.1 (Mortar joints)

Uptake	A1	B1	B2	C2	D2	E2	F1
0.5 ml.	*9 sec.*	*9 sec.*	*8 sec.*	*3 sec.*	*9 sec.*	*3 sec.*	*6 sec.*
1.0 ml.	*20 sec.*	*20 sec.*	*24 sec.*	*5 sec.*	*4 sec.*	*6 sec.*	*14 sec.*
1.5 ml.	*30 sec.*	*32 sec.*	*48 sec.*	*8 sec.*	*23 sec.*	*11 sec.*	*23 sec.*
2.0 ml.	*44 sec.*	*48 sec.*	*72 sec.*	*12 sec.*	*36 sec.*	*15 sec.*	*33 sec*
2.5 ml.	*57 sec.*	*65 sec.*	*95 sec.*	*16 sec.*	*45 sec.*	*20 sec.*	*45 sec.*
3.0 ml.	*71 sec.*	*87 sec.*	*118 sec*	*21 sec.*	*53 sec.*	*25 sec.*	*58 sec.*
4.5 ml.	*86 sec.*	*108 sec.*	*138 sec.*	*27 sec.*	*62 sec.*	*30 sec.*	*71 sec.*
4.0 ml.	*105 sec.*	*134 sec*	*162 sec.*	*33 sec.*	*72 sec.*	*38 sec.*	*88 sec.*
4.5 ml.	*125 sec.*	*158 sec.*	*188 sec.*	*39 sec.*	*84 sec.*	*45 sec.*	*105 sec.*
5.0 ml.	*146 sec.*	*188 sec.*	*217 sec.*	*48 sec.*	*100 sec.*	*54 sec.*	*126 sec.*

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TABLE J.2: WATER UPTAKE TUBE TEST
TEST No.2 (Mortar joints)

Uptake	A1	B1	B2	C2	D2	E2	F1
0.5 ml.	*8 sec.*	*2,280 sec.*	*25 sec.*	*14 sec.*	*20 sec.*	*165 sec.*	*5 sec.*
1.0 ml.	*18 sec.*	----	*53 sec.*	*29 sec.*	*45 sec.*	*1,980 sec.*	*10 sec.*
1.5 ml.	*28 sec.*	----	*85 sec.*	*47 sec.*	*90 sec.*	----	*15 sec.*
2.0 ml.	*44 sec.*	----	*120 sec.*	*67 sec.*	*135 sec.*	----	*20 sec*
2.5 ml.	*61 sec.*	----	*165 sec.*	*93 sec.*	*198 sec.*	----	*27 sec.*
3.0 ml.	*82 sec.*	----	*215 sec*	*122 sec.*	*275 sec.*	----	*35 sec.*
4.5 ml.	*104 sec.*	----	*268 sec.*	*155 sec.*	*408 sec.*	----	*45 sec.*
4.0 ml.	*134 sec.*	----	*335 sec.*	*197 sec.*	*558 sec.*	----	*56 sec.*
4.5 ml.	*206 sec.*	----	*405 sec.*	*257 sec.*	*710 sec.*	----	*70 sec.*
5.0 ml.	*214 sec.*	----	*478 sec.*	*305 sec.*	*930 sec.*	----	*85 sec.*

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TABLE J.3: WATER UPTAKE TUBE TEST
TEST No.3 (Mortar joints)

Uptake	A1	B1	B2	C2	D2	E2	F1
0.5 ml.	*38 sec.*	*10 sec.*	*30 sec.*	*5 sec.*	*8 sec.*	*58 sec.*	*5 sec.*
1.0 ml.	*65 sec.*	*22 sec.*	*71 sec.*	*12 sec.*	*16 sec.*	*144 sec.*	*11 sec.*
1.5 ml.	*95 sec.*	*35 sec.*	*110 sec.*	*21 sec.*	*32 sec.*	*230 sec.*	*17 sec.*
2.0 ml.	*128 sec.*	*48 sec.*	*160 sec.*	*30 sec.*	*51 sec.*	*332 sec.*	*23 sec*
2.5 ml.	*165 sec.*	*65 sec.*	*204 sec.*	*43 sec.*	*68 sec.*	*432 sec.*	*30 sec.*
3.0 ml.	*205 sec.*	*82 sec.*	*252 sec*	*58 sec.*	*84 sec.*	*544 sec.*	*39 sec.*
4.5 ml.	*249 sec.*	*100 sec.*	*298 sec.*	*73 sec.*	*111 sec.*	*678 sec.*	*47 sec.*
4.0 ml.	*299 sec.*	*128 sec*	*357 sec.*	*96 sec.*	*138 sec.*	*845 sec.*	*57 sec.*
4.5 ml.	*366 sec.*	*155 sec.*	*419 sec.*	*118 sec.*	*178 sec.*	*2,508 sec.*	*69 sec.*
5.0 ml.	*445 sec.*	*190 sec.*	*480 sec.*	*149 sec.*	*225 sec.*	----	*82 sec.*

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TABLE J.4: WATER UPTAKE TUBE TEST
TEST No.1 (Brick units)

Uptake	A3	A4	B3	B4	C3	C4	D3	D4	E3	E4	F3	F4
0.5 ml.	*60 sec.*	*60 sec.*	*25 sec.*	*90 sec.*	*167 sec.*	*238 sec.*	*103 sec.*	*87 sec.*	*62 sec.*	*24 sec.*	*42 sec.*	*52 sec.*
1.0 ml.	*133 sec.*	*133 sec.*	*57 sec.*	*178 sec.*	*300 sec.*	*484 sec.*	*228 sec.*	*164 sec.*	*132 sec.*	*54 sec.*	*100 sec.*	*112 sec.*
1.5 ml.	*211 sec.*	*211 sec.*	----	*294 sec.*	*446 sec.*	*724 sec.*	*340 sec.*	*274 sec.*	*212 sec.*	*92 sec.*	*160 sec.*	*176 sec.*
2.0 ml.	*297 sec.*	*282 sec.*	*128 sec.*	*408 sec.*	*597 sec.*	*968 sec.*	*468 sec.*	*347 sec.*	*296 sec.*	*125 sec.*	*224 sec.*	*244 sec.*
2.5 ml.	*385 sec.*	*377 sec.*	*166 sec.*	*544 sec.*	*752 sec.*	*1,208 sec.*	*592 sec.*	*444 sec.*	*382 sec.*	*163 sec.*	*294 sec.*	*310 sec.*
3.0 ml.	*472 sec.*	*452 sec.*	*210 sec.*	*660 sec.*	*910 sec.*	*1,445 sec.*	*723 sec.*	*559 sec.*	*472 sec.*	*205 sec.*	*370 sec.*	*384 sec.*
3.5 ml.	*562 sec.*	*532 sec.*	*266 sec.*	*786 sec.*	*1,065 sec.*	*1,695 sec.*	*852 sec.*	*659 sec.*	*564 sec.*	*254 sec.*	*447 sec.*	*466 sec.*
4.0 ml.	*663 sec.*	*623 sec.*	*334 sec.*	*918 sec.*	*1,232 sec.*	*1,965 sec.*	*978 sec.*	*779 sec.*	*662 sec.*	*300 sec.*	*534 sec.*	*540 sec.*
4.5 ml.	*762 sec.*	*716 sec.*	*405 sec.*	*1,047 sec.*	*1,395 sec.*	*2,208 sec.*	*1,114 sec.*	*897 sec.*	*768 sec.*	*350 sec.*	*618 sec.*	*627 sec.*
5.0 ml.	*850 sec.*	*812 sec.*	*492 sec.*	*1,176 sec.*	*1,552 sec.*	*2,460 sec.*	*1,248 sec.*	*1,015 sec.*	*874 sec.*	*402 sec.*	*710 sec.*	*713 sec.*

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TABLE J.5: WATER UPTAKE TUBE TEST
TEST No.2 (Brick units)

Time	A3	A4	B3	B4	C3	C4	D3	D4	E3	E4	Uptake	F3	F4
360 sec.	0 ml.	0.05 ml.	0 ml.	0 ml.	0.1 ml.	0.1 ml.	0 ml.	0 ml.	0 ml.	0.6 ml.	0.5 ml.	60 sec.	60 sec.
720 sec.	0 ml.	0.05 ml.	0.05 ml.	0 ml.	0.3 ml.	0.2 ml.	0 ml.	0 ml.	0 ml.	1.1 ml.	1.0 ml.	120 sec	120 sec.
1,080 sec.	0 ml.	0.05 ml.	0.05 ml.	0 ml.	0.5 ml.	0.4 ml.	0 ml.	0 ml.	0 ml.	1.7 ml.	1.5 ml.	210 sec.	180 sec.
1,440 sec.	0.05 ml.	0.1 ml.	0.1 ml.	0.05 ml.	0.6 ml.	0.5 ml.	0 ml.	0 ml.	0 ml.	2.0 ml.	2.0 ml.	300 sec	270 sec.
1,800 sec.	0.1 ml	0.1 ml	0.1 ml	0.05 ml	0.75 ml	0.75 ml	0 ml	0 ml	0 ml	2.3 ml	2.5 ml.	395 sec.	360 sec.
2,160 sec	0.1 ml.	0.1 ml.	0.15 ml.	0.1 ml.	0.85 ml.	0.9 ml.	----	----	----	----	3.0 ml.	485 sec.	445 sec.
3,600 sec	----	----	----	----	----	----	0 ml.	0 ml.	0 ml.	3.3 ml.	3.5 ml.	570 sec.	530 sec.
3,960 sec.	0.15 ml.	0.15 ml.	0.25 ml.	0.15 ml.	1.3 ml.	1.55 ml.	----	----	----	----	4.0 ml.	665 sec.	600 sec.
5,100 sec.	----	----	----	----	----	----	0.05 ml.	0.05 ml.	0.1 ml.	----	4.5 ml.	720 sec.	710 sec.
6,300 sec	----	----	----	----	----	----	0.05 ml.	0.05 ml.	0.1 ml.	----	5.0 ml.	845 sec.	780 sec.
7,200 sec.	0.25 ml.	0.25 ml.	0.4 ml.	0.25 ml.	2.15 ml.	2.55 ml.	----	----	----	----			

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TABLE J.6: WATER UPTAKE TUBE TEST
TEST No.3 (Brick units)

Time	A3	A4	B3	B4	C3	C4	D3	D4	E3	E4	Uptake	F3	F4
360 sec.	0.1 ml.	0.05 ml.	0.05 ml.	0.05 ml.	0.05 ml.	0.05 ml.	0.1 ml.	0.1 ml.	0.05 ml.	0 ml.	0.5 ml.	614 sec.	638 sec.
720 sec.	0.15 ml.	0.1ml.	0.1 ml.	0.15 ml.	0.1 ml.	0.1 ml.	0.1 ml.	0.1 ml.	0.1 ml.	0 ml.	1.0 ml.	680 sec.	729 sec.
1,080 sec.	----	----	----	----	----	----	0.1 ml.	0.1 ml.	0.1 ml.	0 ml.	1.5 ml.	750 sec.	820 sec.
1,440 sec.	0.35 ml.	0.2ml.	0.2 ml.	0.4 ml.	0.15 ml.	0.15 ml.	0.1 ml.	0.1 ml.	0.1 ml.	0 ml.	2.0 ml.	827 sec.	900 sec.
1,800 sec.	0.5 ml	0.3ml	0.25 ml	0.5 ml	0.2 ml	0.2 ml	0.1 ml	0.1 ml	0.1 ml	0 ml	2.5 ml.	----	1,080 sec.
2,160 sec	0.55 ml.	0.5ml.	0.3 ml.	----	0.2 ml.	0.2 ml.	----	----	----	----	3.0 ml.	982 sec.	1,114 sec.
3,600 sec	1.0 ml.	1.2 ml.	0.5 ml.	----	0.3 ml.	0.25 ml.	0.1 ml.	0.15 ml.	0.1 ml.	0 ml.	3.5 ml.	1,060 sec.	1,207 sec.
5,100 sec.	1.9 ml.	1.75 ml.	0.7 ml.	----	0.4 ml.	0.3 ml.	0.15 ml.	0.15 ml.	0.1 ml.	0.1 ml.	4.0 ml.	1,144 sec.	1,309 sec
7,200 sec	2.6 ml.	2.2 ml.	0.75 ml.	----	0.7 ml.	0.4 ml.	0.15 ml.	0.15 ml.	0.1 ml.	0.1 ml.	4.5 ml.	1,227 sec.	1,412 sec.
9,180 sec.	3.25	2.8 ml.	0.8 ml.	----		0.5 ml.	0.15 ml.	0.15 ml.	0.15 ml.	0.1 ml.	5.0 ml.	1,315 sec.	1,515 sec.
43,200 sec.	----	----	----	----	----	----	0.25 ml.	0.25 ml.	0.35 ml.	----			

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APPENDIX K: AIR TEST EXPERIMENTAL DATA

TABLE K.1: AIR INFILTRATION TESTS

ΔP (nom.)	PANEL A		PANEL B		PANEL C		PANEL D		PANEL E		PANEL F	
	Test No.1	Test No.2	Test No.1	Test No.2	Test No.1	Test No.2	Test No.1	Test No.2	Test No.1	Test No.2	Test No.1	Test No.2
25 Pa	*0.43 cfm (25 Pa)*	*0.52 cfm (30 Pa)*	*0.53 cfm (25 Pa)*	*0.52 cfm (30 Pa)*	*0.63 cfm (23 Pa)*	*0.56 cfm (20 Pa)*	*0.68 cfm (23 Pa)*	*0.57 cfm (25 Pa)*	*0.58 cfm (25 Pa)*	*0.56 cfm (30 Pa)*	*0.70 cfm (26 Pa)*	*0.52 cfm (30 Pa)*
75 Pa	*1.00 cfm (76 Pa)*	*1.00 cfm (80 Pa)*	*1.05 cfm (75 Pa)*	*1.20 cfm (80 Pa)*	*1.70 cfm (79 Pa)*	*1.40 cfm (70 Pa)*	*1.40 cfm (74 Pa)*	*1.40 cfm (75 Pa)*	*1.65 cfm (75 Pa)*	*1.25 cfm (70 Pa)*	*1.60 cfm (76 Pa)*	*1.40 cfm (70 Pa)*
150 Pa	*1.95 cfm (151 Pa)*	*2.00 cfm (155 Pa)*	*1.85 cfm (151 Pa)*	*2.10 cfm (155 Pa)*	*2.90 cfm (156 Pa)*	*2.80 cfm (155 Pa)*	*2.60 cfm (147 Pa)*	*2.60 cfm (155 Pa)*	*3.20 cfm (152 Pa)*	*2.30 cfm (150 Pa)*	*2.80 cfm (146 Pa)*	*3.10 cfm (155 Pa)*
300 Pa	*3.40 cfm (295 Pa)*	*3.60 cfm (305 Pa)*	*3.60 cfm (297 Pa)*	*3.50 cfm (295 Pa)*	*4.90 cfm (298 Pa)*	*4.90 cfm (300 Pa)*	*4.60 cfm (297 Pa)*	*4.50 cfm (295 Pa)*	*5.50 cfm (299 Pa)*	*4.20 cfm (300 Pa)*	*5.20 cfm (295 Pa)*	*5.10 cfm (300 Pa)*

APPENDIX L: LOG OF TESTING ACTIVITIES

Modified ASTM E-514 Tests

No. 1	May 23, 1996
No. 2	June 27, 1996
No. 3	July 27, 1996
No. 4	September 4, 1996
No. 5	October 11, 1996
No. 6	November 14, 1996

Water Uptake Tube Tests

No.1	May 24, 1996
No.2	June 12, 1996
No.3	September 3, 1996

Air Infiltration Tests

No.1	May 21, 1996
No.2	June 26, 1996

APPENDIX M: MONTHLY METEOROLOGICAL SUMMARIES

Environnement Canada Direction de l'environnement atmosphérique

Environment Canada Atmospheric Environment Branch

SOMMAIRE MÉTÉOROLOGIQUE MENSUEL
MONTHLY METEOROLOGICAL SUMMARY

Montreal - Dorval (AUTO)

Avril 1996

April 1996

LAT 45° 28N LONG 73° 45W ALTITUDE 35 METRES (NMM) ÉLÉVATION 35 METRES (ASL) HEURE NORMALE UTILISEE STANDARD TIME USED DE L'EST Eastern

DATE	TEMPERATURE / TEMPERATURE MAXIMALE MAXIMUM °C	MINIMALE MINIMUM °C	MOYENNE MEAN °C	DEGRES-JOURS / DEGREE-DAYS DE CHAUFFE HEATING Base 18 °C	DE CROISSANCE GROWING Base 5 °C	DE REFRIGERATION COOLING Base 18 °C	HUMIDITE REL. / REL. HUMIDITY MAXIMALE MAXIMUM %	MINIMALE MINIMUM %	GRADE THUNDERSTORM	PRECIPITATIONS / PRECIPITATION PLUIE (AUSTRALIE) RAINFALL mm	NEIGE (AUSTRALIE) SNOWFALL cm	PRECIP TOTAL TOTAL PRECIP mm	HAUTEUR DU SOL SNOW ON GROUND cm	VENTS / WINDS VITESSE MOYENNE AVERAGE SPEED km/h	DIRECTION DOMINANTE PREVAIL DIRECTION	VITESSE MAXIMALE MAX GUST 2 MIN & DIRECTION km/h	MAX 2 MIN VITESSE SPEED & DIRECTION	INSOLATION EFFECTIVE BRIGHT SUNSHINE heures hours
1	10.0	-2.4	3.8	14.2			81	27		5.2	3.4	8.6	1.0	11.5	NNE	NW	28	1.8
2	5.7	-2.5	1.6	16.4			80	31		2.0	TR	2.0	1.0	12.1	NW	NW	22	11.8
3	3.5	-5.2	-0.9	18.9			61	31						19.0	NW	NW	33	11.5
4	5.8	-7.7	-1.0	19.0			52	29						15.8	WNW*	W*	26	11.4
5	5.4	-2.8	1.3	16.7			58	40						12.5	W	W	20	4.3
6	6.7	-3.0	1.9	16.1			64	45		TR		TR		12.5	NE	NE*	22	4.4
7	5.9	1.6	3.8	14.2			74	49		0.4	TR	0.4	TR	11.7	E	NE*	19	0.2
8	4.1	0.3	2.2	15.8			77	57		0.8	3.0	5.0	TR	7.0	E*	NNE	24	
9	5.1	-2.0	1.6	16.4			77	53		TR	2.2	2.2	1.0	6.3	NE	S	15	1.8
10	4.3	-1.7	1.3	16.7			78	55		2.8	0.4	3.2		18.8	N	NNE	30	0.1
11	12.7	1.4	7.1	10.9	2.1		70	37		0.5		0.5		23.5	W	W	39	6.5
12	12.8	0.4	6.6	11.4	1.6		74	23						14.6	N	NW	28	6.6
13	5.8	-1.5	2.2	15.8			75	25		4.8	3.0	7.8		15.5	NE	NNE	20	4.4
14	4.6	-2.6	1.0	17.0			78	66		3.2	4.0	7.6	TR	14.6	NNE	NNE	30	0.5
15	12.6	-2.8	4.9	13.1			79	44		6.0		6.0		18.4	ESE	SE*	31	11.3
16	5.9	2.1	4.0	14.0			81	73		35.5		35.5		20.8	ESE	SE	41	
17	6.2	0.3	3.3	14.7			79	60		10.5	5.0	15.5		21.9	W	W	39	0.2
18	12.3	-1.4	5.5	12.5	0.5		67	41						12.6	W	W	22	12.1
19	20.2	4.8	12.5	5.5	7.5		77	34		0.5		0.5		10.7	E	ESE	22	6.1
20	14.9	4.9	9.9	8.1	4.9		83	64	1	18.5		18.5		11.5	NNE	NE*	19	0.1
21	16.7	5.2	11.0	7.0	6.0		82	56		1.0		1.0		22.6	SW	SW	37	6.9
22	17.7	2.8	10.3	7.7	5.3		100	47		9.5		9.5		9.8	SW*	SE	20	6.7
23	12.2	4.7	8.5	9.5	3.5		100	82		5.5		5.5		12.7	W	W*	24	
24	8.1	-0.5	3.8	14.2			99	40		0.2	3.3	3.5		26.9	W	W	43	5.5
25	10.9	0.4	5.7	12.3	0.7		95	53		6.5		6.5		11.5	E	SSW*	17	2.7
26	14.3	8.4	11.4	6.6	6.4		99	68		13.0		13.0		10.2	SSE	W*	19	
27	10.3	-0.1	5.1	12.9	0.1		81	53		1.0	TR	1.0		27.4	WSW	WSW	59	1.4
28	10.3	0.3	5.3	12.7	0.3		85	40						15.8	W	WSW*	30	9.5
29	13.8	0.4	7.1	10.9	2.1		82	35						11.3	ESE	ESE*	20	7.2
30	13.9	6.9	10.4	7.6	5.4		99	71		24.5		24.5		18.6	E	SW	31	
	MOY. 9.8 MEAN	MOY. 0.3 MEAN	MOY. 5.0 MEAN	TOTAL 388.8	TOTAL 46.4	TOTAL	MOY. 79 MEAN	MAX. 47 MEAN	TOTAL 1	TOTAL 151.9	TOTAL 24.3	TOTAL 177.8		MOY. 15.3 MEAN	DOMINANTE PREVAILING W	MAXIMALE MAXIMUM WSW	59	TOTAL 135.0
NORMALE NORMAL	10.7	6	5.7	370.1	65.7	4			1	62.6	10.9	74.8		16.0	W			182.5

SOMMAIRE DE DEGRES-JOURS/DEGREE-DAY SUMMARY

AU-DESSOUS DE 18°C BELOW 18°C	ANNEE EN COURS THIS YEAR	ANNEE PRECEDENTE PREVIOUS YEAR	NORMALE NORMAL	AU-DESSUS DE 5°C ABOVE 5°C	ANNEE EN COURS THIS YEAR	ANNEE PRECEDENTE PREVIOUS YEAR	NORMALE NORMAL
TOTAL DU MOIS TOTAL FOR MONTH	388.8	427.7	370.1	TOTAL DU MOIS TOTAL FOR MONTH	46.4	44.5	65.7
ACCUMULES DEPUIS LE 1ER JUILLET ACCUMULATED SINCE JULY 1	4426.1	4022.4	4364.0	ACCUMULES DEPUIS LE 1ER AVRIL ACCUMULATED SINCE APRIL 1	46.4	44.5	65.7

JOURS AVEC PRECIPITATIONS TOTALES DAYS WITH TOTAL PRECIPITATION

0.1 OU PLUS OR MORE	1.0 OU PLUS OR MORE	2.0 OU PLUS OR MORE	10.0 OU PLUS OR MORE	50.0 OU PLUS OR MORE
21	19	17	5	

JOURS AVEC CHUTES DE NEIGE DAYS WITH SNOWFALL

0.1 OU PLUS OR MORE	1.0 OU PLUS OR MORE	2.0 OU PLUS OR MORE	10.0 OU PLUS OR MORE	50.0 OU PLUS OR MORE
8	7	7		

Données non contrôlées/Data not validated.

Les precipitations ont un seuil mesurable de 1,0 mm
Measurable threshold of precipitation is 1.0 mm

1. Journee climatologique/Climatological Day
2. Normale/Normal 1961-1990
3. TR=Traces
4. M=Manquant/Missing E=Estime/Estimated
5. Pas de valeur/No entry=Pas d'évenement/No occurence
6. C=Calme/Calm

Canada

RELEVÉS COMPARATIFS À:
COMPARATIVE RECORDS AT:

Montreal - Dorval (AUTO)

Avril 1996
April 1996

	CE MOIS-CI THIS MONTH		ANNÉE PRÉCÉDENTE PREVIOUS YEAR		NORMALE NORMAL	RECORD POUR LE MOIS RECORD FOR THE MONTH						
						MAXIMUM ABSOLU HIGHEST EVER			MINIMUM ABSOLU LOWEST EVER			NO. D'ANNÉES NO OF YEARS
	RELEVÉ VALUE	JOUR DAY	RELEVÉ VALUE	JOUR DAY		RELEVÉ VALUE	JOUR DAY	ANNÉE YEAR	RELEVÉ VALUE	JOUR DAY	ANNÉE YEAR	
TEMPERATURE MAXIMALE / HIGHEST TEMPERATURE (MAXIMUM) °CELSIUS	20.2	19	16.4	19		30.0	27	1990				55
TEMPERATURE MINIMALE / LOWEST TEMPERATURE (MINIMUM) °CELSIUS	-7.7	4	-14.5	5					-15.0	4	1954	55
TEMPERATURE MENSUELLE MOYENNE / MEAN MONTHLY TEMPERATURE °CELSIUS	5.0		3.7		5.7	9.4		1987	1.9		1943	55
HAUTEUR TOTALE MENSUELLE DE PLUIE / TOTAL MONTHLY RAINFALL millimètres (mm)	151.9		69.2		62.6	122.4		1991	17.4		1992	55
HAUTEUR TOTALE MENSUELLE DE NEIGE / TOTAL MONTHLY SNOWFALL centimètres (cm)	24.3		1.0		10.9	41.6		1993	0.0		1991	55
PRECIPITATION TOTALE MENSUELLE / TOTAL MONTHLY PRECIPITATION millimètres (mm)	177.8		70.2		74.8	150.0		1983	20.7		1966	55
NOMBRE DE JOURS AVEC PRECIPITATION MESURABLE / NO OF DAYS WITH MESURABLE PRECIPITATION	22		12		13	19		1983	7		1975	55
HAUTEUR DE PLUIE MAXIMALE EN UNE JOURNEE / GREATEST RAINFALL IN ON DAY millimètres (mm)	35.5	16	18.0	28		40.4	21	1991				55
HAUTEUR DE NEIGE MAXIMALE EN UNE JOURNEE / GREATEST SNOWFALL IN ON DAY centimètres (cm)	5.0	17	1.0	15		31.2	1	1993				55
PRECIPITATION MAXIMALE EN UNE JOURNEE / GREATEST PRECIPITATION IN ONE DAY millimètres (mm)	35.5	16	18.0	28		40.4	21	1991				55
HAUTEUR DE PLUIE ENREGISTREE EN: / MAXIMUM RAINFALL RECORDED IN:												
5 MINUTES millimètres (mm)						4.6	27	1994				54
10 MINUTES millimètres (mm)						4.8	4	1963				54
15 MINUTES millimètres (mm)						6.6	4	1963				54
30 MINUTES millimètres (mm)						8.4	4	1963				54
60 MINUTES millimètres (mm)						10.2	4	1963				54
24 HEURES CONSECUTIVES / CONSECUTIVE HOURS millimètres (mm)						42.9	18/19	1969				55
VITESSE MOYENNE DU VENTS (km/h) / MEAN WIND SPEED (km/h)	15.3		15.7		16.0	22.1		1973	11.7		1971	55
VITESSE MAXIMALE (MOYENNE SUR 2 MIN.) (km/h) / MAXIMUM SPEED (2 MIN. MEAN) (km/h)	WSW 59	27	W 59	4		W 70	3	1977				55
POINTE DU VENT MAXIMALE (km/h) / MAXIMUM GUST SPEED (km/h)	WSW 74	27	W 74	4		WSW 106	19	1975				55
TOTAL DES HEURES INSOLATION / TOTAL HOURS OF SUNSHINE	135.0		156.8		182.5	223.6		1986	102.3		1983	26
PRESSION MOYENNE À LA STATION (kPa) / MEAN STATION PRESSURE (kPa)	100.73		M		100.96	101.56		1954	100.42		1953	54
PRESSION MAXIMAL À LA STATION (kPa) / GREATEST STATION PRESSURE (kPa)	102.02	29	M			103.50	28	1966				
PRESSION MINIMALE À LA STATION (kPa) / LEAST STATION PRESSURE (kPa)	98.94	25	M						97.22	2	1970	54

DONNÉES CLIMATOLOGIQUES CE MOIS-CI POUR LES 10 DERNIÈRES ANNÉES
CLIMATOLOGICAL DATA THIS MONTH FOR THE PAST 10 YEARS

ANNÉE YEAR	TEMP MAXIMALE MAXIMUM TEMP	TEMP MINIMALE MINIMUM TEMP	TEMP MOYENNE MEAN TEMP	HAUTEUR DE PLUIE RAINFALL	HAUTEUR DE NEIGE SNOWFALL	PRECIP TOTALE TOTAL PRECIP	VITESSE MOYENNE DES VENTS MEAN WIND SPEED	VITESSE MAXIMALE DES VENTS MEAN WIND SPEED	HEURES INSOLATION SUNSHINE HOURS	DEGRES-JOURS DE CHAUFFE HEATING DEGREE-DAYS	DEGRES-JOURS DE CROISSANCE GROWING DEGREE-DAYS	DEGRES-JOURS DE REFRIGERATION COOLING DEGREE-DAYS	A S H S A S
1987	27.5	-5.2	9.4	34.2	2.0	36.8	15.8	SE 43	208.5	260.4	146.2	2.8	201.2
1988	17.6	-2.0	6.7	78.8	TR	78.8	15.1	NE 43	124.7	339.8	58.4		166.6
1989	19.4	-4.8	4.8	49.0	3.6	52.0	12.3	W 41	187.8	395.5	33.4		205.0
1990	30.0	-5.8	6.4	84.1	16.0	100.1	17.3	WSW 56	165.9	352.2	97.8	5.1	198.4
1991	21.5	-4.4	7.8	122.4	TR	122.4	13.9	NE 63	162.8	305.0	98.4		197.0
1992	24.3	-8.3	4.9	17.4	23.8	41.2	13.9	W 37	193.1	392.4	58.1		206.5
1993	22.2	-6.4	5.9	110.6	41.6	152.2	12.7	NE 54	114.3	364.2	64.6		242.0
1994	22.2	-8.5	5.3	74.4	24.2	98.6	15.7	WSW 48	156.9	380.2	53.0		274.4
1995	16.4	-14.5	3.7	69.2	1.0	70.2	15.7	W 59	187.2	427.7	44.5		186.7
1996	20.2	-7.7	5.0	151.9	24.3	177.8	15.3	WSW 59	135.0	388.8	46.4		213.6

AVERTISSEMENTS

Température horaire
Hourly temperature

Montreal - Dorval (AUTO)

Avril 1996
April 1996

DATE	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22
1	10	36	30	12	9	-14	2	15	21	36	66	69	84	98	77	73	73	44	22	6	2	4	[illegible]
2	4	6	5	14	11	1	-21	-3	6	11	17	26	37	43	48	48	49	44	33	4	-7	5	-19
3	-7	-16	-15	-32	-43	-48	-38	-15	-4	-4	-2	13	21	24	29	27	25	20	11	3	-5	-14	-32
4	-36	-42	-49	-54	-61	-67	-69	-48	-38	-26	-11	4	17	28	44	48	54	46	25	25	23	15	24
5	-4	-2	-6	-13	-21	-26	-26	-15	-9	-1	15	17	27	34	45	47	50	35	28	23	14	9	2
6	-16	-9	-11	-12	-18	-20	-29	-26	-22	-11	-1	15	28	48	56	59	59	51	43	42	42	45	46
7	53	47	44	44	41	32	28	33	32	34	44	44	38	47	44	48	51	57	53	53	39	35	41
8	17	19	17	11	11	11	11	10	9	22	23	29	37	28	24	35	34	23	12	15	11	11	7
9	5	4	4	3	2	3	5	2	2	3	10	24	34	32	45	46	37	44	40	31	32	16	[illegible]
10	-3	-10	-12	-8	-7	-6	-2	4	15	30	33	30	34	26	40	40	32	27	21	19	14	16	[illegible]
11	35	34	30	28	24	24	24	44	60	81	99	114	109	96	107	104	100	96	85	74	60	63	60
12	55	55	53	48	46	43	50	49	57	67	85	97	114	114	114	114	102	91	72	55	42	48	[illegible]
13	9	5	-1	-4	-9	-12	-15	-13	-1	5	24	32	43	56	49	53	54	52	51	50	53	38	11
14	13	12	18	19	20	21	25	25	19	15	7	8	12	14	19	25	37	42	42	39	20	7	[illegible]
15	0	-19	-7	-9	-9	-10	-11	27	32	36	37	49	59	91	98	113	124	119	113	113	111	107	83
16	58	48	48	47	43	42	42	45	42	47	48	51	57	58	58	57	57	56	53	48	41	37	29
17	25	21	9	9	6	4	5	7	11	23	31	39	43	51	55	58	51	45	36	25	22	19	18
18	16	16	12	8	-3	-9	6	17	25	44	55	65	79	93	106	112	115	119	103	81	79	72	69
19	72	68	71	66	50	52	58	76	97	114	135	155	170	191	199	186	174	156	149	135	114	100	91
20	76	69	60	60	54	58	56	66	78	95	96	89	100	104	112	142	142	144	128	113	133	135	145
21	106	109	114	118	118	117	121	117	114	117	135	126	140	158	152	163	154	149	143	130	123	111	97
22	70	52	59	53	32	45	61	72	84	98	116	140	153	163	163	160	153	141	132	117	116	116	106
23	97	96	93	92	94	92	88	96	91	93	100	100	113	116	109	114	111	105	103	98	94	87	84
24	66	47	36	29	24	19	9	-2	-2	-2	1	19	48	66	72	75	71	73	71	59	49	45	39
25	33	21	13	11	7	11	11	24	38	54	60	65	76	87	96	106	104	88	83	76	71	79	82
26	96	100	109	112	115	88	122	130	138	139	137	130	118	114	114	115	111	110	109	104	101	100	97
27	96	102	87	48	27	20	18	15	15	27	26	33	51	40	39	43	47	41	38	34	15	15	26
28	29	23	22	13	11	6	14	27	33	50	58	61	65	76	91	96	99	91	95	77	76	50	58
29	40	34	39	26	19	26	41	60	86	92	107	126	127	131	129	124	112	112	92	76	76	75	82
30	80	80	84	86	88	89	93	97	101	105	102	106	104	104	122	134	132	112	101	100	96	83	74

Unités / Units: 0.1 °C M = Manquant /Missing

Lire / Read -123 = -12.3 °C -1 = -0.1 °C 0 = 0.0 °C 12 = +1.2 °C 123 = +12.3 °C

Heure normale locale: Est

Local standard time: Eastern

Vents horaires (km/h)
Hourly winds (km/h)

Montreal - Dorval (AUTO)

Avril 1996
April 1996

Heure normale locale: Est
Local standard time : Eastern

DATE	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Rafale max Peak Gust	heure time	jour day
1	C	NE	ENE	C	NE	NNE	NNE	NNE	NNE	NNE	NE	N	NNE	NE	NNE	N	NNW	NW	NW	WNW	WSW	C	W	W	NW		
	0	7	6	0	11	4	7	9	15	15	17	22	19	15	24	15	15	28	19	6	4	0	7	7	37	18	1
2	WNW	NNW	NW	N	N	NNW	NW	NNW	NNW	N	N	NW	WNW	WNW	W	NW	W	NW	WNW	NW	WNW	NNW	C	WNW	WNW		
	6	6	6	13	11	9	11	13	13	19	13	17	17	15	20	22	19	19	15	9	6	4	0	4	35	13	2
3	NNW	N	N	NW	WNW	NW	WNW	NW	NNW	NW	WNW	WNW	NW	WNW	NW	NW	WNW	NW	NW	WNW	WNW	NW	NW	NNW	WNW		
	6	9	7	6	4	11	11	15	17	15	22	24	33	31	24	31	30	28	28	26	20	17	11	19	46	14	3
4	NNW	N	NW	NW	WNW	WNW	WNW	WNW	W	WNW	W	W	W	WNW	W	W	W	WNW	W	WNW	NW	NW	NNE	N	WSW		
	15	11	17	17	11	11	7	15	13	15	15	15	20	22	26	24	20	26	19	17	13	9	15	13	37	14	4
5	N	N	NNE	N	NNE	NNE	NNE	N	NNE	N	W	WSW	SSW	WSW	WNW	W	W	W	W	W	W	W	W	W			
	9	9	13	11	11	9	11	15	9	7	7	9	7	13	9	15	11	19	17	19	20	15	15	15			
6	WNW	W	WNW	W	WSW	W	WSW	SW	WSW	SSW	SSW	WSW	ESE	NE	ENE	NE	NE	NE	NE	NE	NE	NE	NE	E	NE		
	11	13	13	11	7	9	9	4	6	7	6	4	11	11	13	13	20	19	22	17	22	19	15	15	33	20	6
7	E	ENE	E	ENE	E	ESE	E	ENE	E	ENE	ENE	E	NE	ENE	NE	NE	NE	ENE	ESE	E	SE	E	E	ESE			
	19	7	9	11	11	15	7	9	13	13	15	13	15	13	17	19	19	9	13	6	11	4	7	19			
8	E	NE	E	C	C	NNE	NNE	NNE	N	N	NE	E	ESE	E	NE	NNE	NNE	NE	C	E	ENE	ENE	E	C			
	6	6	7	0	0	9	11	11	4	11	9	4	7	4	7	17	24	19	0	4	4	6	6	0			
9	C	NE	C	NE	NE	SE	SE	SE	W	W	W	WSW	WSW	NW	C	C	S	SSE	NE	NE	E	N	NE	NNE			
	0	4	0	6	4	4	4	4	7	9	4	6	7	7	0	0	15	6	11	11	7	7	7	6			
10	NNE	NNE	N	N	NNE	N	N	N	N	NNE	NNE	N	N	N	N	N	N	N	NNW	NNW	NNW	NW	NNW	N	NNE		
	9	9	11	9	13	17	17	13	15	20	30	22	22	17	26	26	22	24	17	19	19	17	15	22	48	17	10
11	N	NNW	WNW	NW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	W	W	W	W	W	W	W	W	SW	WSW	W	WSW	WNW		
	19	19	13	17	15	15	17	24	30	30	31	31	31	31	39	31	31	24	28	24	20	22	17	15	50	11	11
12	WSW	W	WSW	WNW	W	W	WSW	WSW	W	NW	N	NNW	NW	NW	NW	NW	N	N	NNE	N	NNE	NNE	N	N	NW		
	11	17	13	6	6	9	4	7	7	7	13	15	17	24	28	19	24	22	20	17	13	19	13	15	37	15	12
13	NNE	NNE	NNE	NNE	NNE	NE	NNE	NNE	NE	NE	E	NE	NE	ENE	NNE	ENE	ENE	NE	NE	NE	NE	E	ESE	ENE	NE		
	15	17	20	17	13	15	13	19	15	17	7	17	19	11	19	11	13	19	19	19	13	11	19	13	33	21	13
14	NE	NE	NE	ENE	NE	ENE	ENE	NE	NE	NE	NE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	N	N	C	NE	ENE	NNE		
	19	13	15	15	13	9	9	13	13	15	19	24	26	26	30	28	20	26	15	13	7	0	6	4	37	14	14
15	C	NW	C	N	NNE	NNE	NNE	ENE	E	ESE	ESE	SE	E	ESE	E	E	ESE	ESE	ESE	ESE	ESE	SE	SE	SE	SSE		
	0	4	0	4	7	4	6	4	11	15	19	22	19	24	24	19	24	30	19	19	24	24	31	31	52	0	15
16	SSE	SSE	SE	SE	SE	SE	ESE	ESE	ESE	SE	ESE	ESE	ESE	ESE	ESE	SE	ESE	SE	SSE	WSW	W	W	W	W	SE		
	31	31	30	41	17	28	15	24	35	28	24	22	20	19	19	15	13	17	15	19	15	15	17	13	61	3	16
17	WNW	WNW	WNW	W	WNW	WNW	W	W	WNW	WNW	W	W	W	W	W	W	W	W	WNW	WNW	WNW	W	W	W	W		
	20	17	13	13	9	6	4	13	13	19	22	22	24	30	33	35	28	39	31	33	24	28	26	22	54	17	17
18	W	W	W	WNW	W	W	W	W	W	W	W	W	W	WNW	W	WSW	SSW	W	W	SW	SW	C	S	SE	W		
	20	19	19	15	13	13	13	13	19	19	19	22	19	17	17	13	13	9	17	9	9	0	4	4	33	12	18
19	ESE	C	E	ESE	ESE	E	E	ENE	NE	ENE	E	E	E	ESE	E	SSE	S	C	NE	NNE	N	NNE	NNE	NNE	ESE		
	7	0	6	13	13	9	9	11	13	9	13	13	15	22	11	7	9	0	7	11	7	15	7	13	33	13	19
20	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NE	NE	C	C	NE	NE	NE	NNE	NE	NW	NNW	E	E	E	N	WSW		
	11	13	15	17	15	17	15	15	15	13	7	0	0	19	11	13	13	9	9	19	9	7	6	13	72	23	20
21	SSE	ESE	SE	SSW	SW	SW	SW	SW	SW	SW	SW	WSW	WSW	WSW	SW	WSW	SW	SW	SW	SW	W	W	WNW	W	WSW		
	13	7	17	11	19	19	19	26	30	37	30	33	33	31	28	33	33	22	24	19	19	17	15	11	52	9	21
22	WSW	S	SW	SW	W	C	SE	SW	SSW	SW	S	ESE	SE	SSE	SE	ESE	SE	E	NE	NE	NE	NE	N	N	ESE		
	7	9	9	9	6	0	6	7	7	9	6	6	19	17	20	19	15	11	17	17	4	6	6	6	31	16	22
23	NNW	WNW	W	WSW	W	WSW	W	W	WNW	W	C	C	C	NNE	SSE	NE	NE	NE	NNE	N	N	N	NNW	NW	WNW		
	7	6	9	7	11	11	7	15	19	9	0	0	0	6	7	11	17	17	17	15	22	20	17	19	37	1	23
24	W	WNW	WNW	W	W	W	W	W	W	W	W	WNW	W	W	W	W	W	W	W	W	WSW	SW	WSW	WSW	W		
	24	24	22	19	22	24	35	26	26	24	26	30	31	37	41	43	37	35	26	20	15	26	17	20	56	13	24
25	WSW	W	W	WSW	WSW	W	WSW	WSW	W	SW	SSW	SW	SW	C	SE	E	E	SE	ESE	E	E	ENE	ENE	E			
	24	19	15	15	11	13	9	9	6	15	17	15	7	0	17	11	11	11	13	17	13	7	9	11			
26	E	ESE	SSE	SSE	SSE	C	SSE	SW	SW	SW	W	SSW	C	C	C	W	C	ESE	E	ESE	SE	SSE	SE	SSE			
	9	15	11	11	4	0	15	11	15	15	19	7	0	0	0	6	0	6	15	19	19	11	15	17			
27	S	SSW	WSW	WSW	WSW	WSW	WSW	WSW	W	W	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	SW	S	WSW		
	9	19	48	59	46	33	29	41	37	35	31	31	30	30	33	31	30	22	19	13	7	7	7	9	74	3	[illegible]
28	SW	WSW	WSW	W	WSW	WSW	WSW	WSW	WSW	W	WSW	W	WSW	W	W	W	W	W	NW	W	W	WSW	W	C	WNW		
	11	20	15	13	17	15	17	19	20	19	20	17	30	20	30	24	22	15	17	11	17	7	6	0	44	15	[illegible]
29	C	S	S	S	SSW	SSW	C	SSW	C	S	SSE	E	ESE	SSE	SE	SSE	SE	SE	SE	SE	ESE	ESE	E	ESE			
	0	7	6	7	6	4	0	6	0	6	11	9	20	15	17	20	19	17	19	13	15	9	11	20			
30	ESE	ESE	E	E	E	E	ENE	ENE	E	E	E	E	E	ESE	ESE	SE	S	SSW	SSW	SW	S	SW	SW	SW	ESE		
	9	13	13	13	11	13	13	11	19	17	17	13	20	11	17	30	24	22	20	17	15	31	19	22	46	16	30

Avis/Note

C= Calme /Calm

M= Manquant /Missing

Points de rosée horaires
Hourly dew points

Montreal - Dorval (AUTO)

Avril 1996
April 1996

DATE	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	-95	-103	-110	-92	-90	-91	-81	-75	-76	-76	-78	-86	-84	-81	-36	-83	-39	-30	-13	-28	-28	-27	-25	-24
2	-27	-24	-25	-20	-38	-54	-72	-65	-71	-81	-85	-83	-86	-88	-90	-109	-105	-111	-112	-117	-110	-126	-121	-108
3	-110	-104	-117	-106	-115	-117	-101	-87	-99	-109	-120	-130	-113	-122	-116	-126	-123	-124	-136	-137	-139	-137	-138	-152
4	-154	-154	-159	-155	-157	-155	-151	-155	-159	-148	-133	-134	-125	-126	-115	-115	-110	-107	-113	-111	-111	-102	-95	-99
5	-101	-104	-104	-108	-108	-106	-106	-111	-109	-108	-102	-97	-92	-87	-80	-78	-74	-80	-80	-77	-81	-81	-82	-84
6	-87	-89	-88	-89	-88	-90	-95	-94	-95	-91	-89	-82	-72	-61	-53	-45	-39	-34	-32	-28	-20	-16	-20	-30
7	-30	-30	-31	-35	-37	-32	-28	-30	-32	-31	-27	-24	-22	-17	-11	-14	-18	-40	-34	-44	-31	-24	-33	-36
8	-25	-24	-27	-27	-25	-26	-24	-27	-26	-24	-23	-22	-16	-29	-16	-22	-43	-34	-29	-23	-28	-29	-30	-32
9	-31	-31	-33	-33	-33	-34	-34	-34	-33	-33	-29	-20	-17	-34	-33	-41	-34	-35	-32	-31	-37	-46	-47	-46
10	-47	-49	-54	-51	-49	-47	-46	-46	-43	-46	-49	-28	-19	-17	-14	-23	-26	-22	-22	-20	-22	-18	-16	-24
11	-27	-27	-32	-42	-46	-49	-49	-44	-29	-22	-20	-16	-23	-35	-32	-24	-38	-37	-37	-21	-5	12	10	7
12	3	2	-1	-4	-3	-1	6	6	11	16	7	5	-6	-32	-42	-50	-98	-99	-96	-111	-104	-110	-110	-105
13	-107	-114	-125	-123	-139	-149	-142	-145	-140	-133	-129	-132	-126	-125	-121	-131	-121	-108	-105	-103	-104	-56	-28	-21
14	-28	-27	-22	-21	-18	-15	-11	-10	-15	-19	-28	-28	-23	-22	-16	-15	-10	-14	-15	-16	-25	-33	-23	-40
15	-35	-59	-41	-46	-43	-45	-43	-12	-27	-16	-12	-10	-13	1	-3	2	5	2	8	3	-7	-7	15	18
16	14	7	3	5	6	7	7	9	9	11	13	16	22	24	24	26	27	24	22	19	10	7	-2	-9
17	-9	-13	-26	-24	-27	-29	-27	-25	-21	-10	-3	4	7	12	9	6	-11	-22	-30	-41	-46	-47	-47	-47
18	-50	-54	-53	-55	-61	-62	-54	-53	-50	-34	-28	-15	-5	-7	-5	-7	-2	-10	-20	-26	-32	-28	-31	-35
19	-43	-41	-42	-32	-22	-23	-27	-27	-26	-12	2	10	12	32	37	51	59	80	82	73	61	55	52	45
20	34	28	18	14	11	13	13	17	27	30	42	49	60	63	78	93	98	102	96	81	94	97	110	86
21	79	82	85	89	87	78	80	60	55	58	68	55	66	77	69	75	69	67	62	56	45	36	26	15
22	14	8	15	9	-12	0	13	29	47	40	39	30	52	55	63	59	74	94	99	101	103	109	106	100
23	97	96	93	92	94	92	88	91	83	81	76	80	84	87	93	89	91	90	90	88	87	81	76	73
24	63	36	23	13	1	-11	-18	-6	-6	-5	0	6	4	6	-16	-29	-45	-54	-30	-42	-25	16	16	17
25	9	1	-2	-1	-5	-4	-3	3	4	13	19	0	11	5	12	13	16	56	62	64	64	72	75	77
26	79	77	72	74	72	78	73	72	86	93	96	91	100	103	105	108	102	105	100	102	98	97	93	92
27	89	86	47	12	-19	-28	-32	-53	-63	-51	-59	-51	-22	-41	-48	-44	-37	-32	-22	-37	-30	-38	-30	-27
28	-21	-18	-12	-18	-11	-16	-29	-32	-32	-28	-9	-33	-18	-24	-16	-18	-29	-29	-30	-28	-15	-11	-3	-20
29	1	-4	-16	-19	-21	-16	-23	-9	-17	-30	-15	-3	-24	-18	-19	-2	-5	18	39	43	45	45	46	45
30	50	51	44	44	44	46	47	49	53	73	85	91	90	94	100	102	119	107	100	97	92	64	53	39

Unités / Units: 0.1 °C

M = Manquant / Missing

Humidités relatives horaires
Hourly relative humidities

Montreal - Dorval (AUTO)

Avril 1996
April 1996

DATE	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	43	33	33	46	47	36	34	31	49	44	33	32	29	27	38	37	38	59	76	78	80	80	81	80
2	80	80	80	78	70	66	68	63	56	50	47	44	40	38	36	31	32	31	34	40	45	37	45	50
3	45	51	46	56	57	58	61	58	49	45	40	33	36	33	33	31	32	33	32	34	35	38	44	36
4	39	41	42	45	46	49	52	43	38	38	39	35	34	31	30	29	29	32	35	36	36	41	41	44
5	48	46	47	48	51	54	54	48	47	44	41	42	41	41	40	40	40	43	45	47	49	51	53	55
6	58	54	56	56	59	59	60	59	57	54	51	48	48	45	45	47	49	54	58	60	64	64	61	53
7	55	57	58	56	57	63	67	63	63	62	60	61	65	63	67	64	61	50	53	49	60	65	58	62
8	74	73	72	76	77	76	77	76	77	72	72	69	68	66	75	66	57	66	74	76	75	75	76	75
9	77	77	76	77	77	76	75	77	77	77	75	73	69	62	57	53	60	56	59	64	60	63	60	71
10	72	75	73	73	73	74	72	69	65	57	55	66	68	73	68	63	66	70	73	75	77	78	74	66
11	64	64	64	60	60	58	58	53	53	48	43	40	40	39	37	41	38	39	42	51	63	70	70	70
12	69	69	68	69	70	73	73	74	72	70	58	53	43	36	33	31	23	25	29	29	34	31	36	41
13	41	40	39	40	36	34	37	36	34	35	31	29	28	26	28	25	27	30	31	32	31	50	75	75
14	74	75	75	75	76	77	77	78	78	78	77	77	77	77	78	75	71	67	66	67	72	75	73	71
15	77	74	78	76	78	77	79	75	65	69	70	66	60	53	49	46	44	44	48	47	44	45	62	70
16	73	75	73	74	77	78	78	77	79	77	78	78	78	79	79	80	81	80	80	81	80	81	80	79
17	78	78	77	79	78	78	79	79	79	79	78	78	77	76	72	69	64	62	62	62	61	62	62	62
18	61	60	62	63	65	67	64	60	58	57	55	57	55	50	46	44	44	41	42	47	45	49	49	48
19	44	46	44	49	60	58	54	48	42	42	40	37	34	35	34	41	47	61	64	66	70	74	77	73
20	75	75	74	72	74	73	74	71	70	64	69	76	76	76	80	72	75	76	81	81	77	78	80	83
21	83	83	82	82	81	77	76	68	67	67	64	62	61	59	58	56	57	58	58	61	59	60	61	66
22	67	73	73	73	73	73	71	74	77	67	59	47	51	49	52	51	59	73	80	90	92	95	100	100
23	100	100	100	100	100	100	100	97	95	92	85	87	82	82	90	85	87	90	92	93	95	96	95	93
24	98	93	91	89	85	80	82	97	97	98	99	91	73	65	53	48	43	40	49	48	59	81	85	87
25	84	87	90	92	92	90	90	86	78	75	75	63	63	56	56	53	54	80	87	92	95	95	95	92
26	89	86	78	77	75	93	72	68	71	74	76	77	89	93	94	95	94	97	94	99	98	98	97	97
27	95	90	76	77	72	70	69	60	56	56	53	54	59	55	53	53	54	59	65	60	72	68	66	81
28	70	74	78	80	85	85	73	65	62	57	62	51	55	49	47	45	40	43	41	47	52	65	65	54
29	76	76	67	72	75	74	63	61	48	42	43	41	35	36	36	42	44	52	69	80	81	81	78	75
30	81	82	76	75	74	74	73	72	72	81	89	90	91	94	86	81	92	97	99	98	97	88	87	80

Unités: pourcent (%) /Units: percent (%)

Environnement Canada Direction de l'environnement atmosphérique

Environment Canada Atmospheric Environment Branch

SOMMAIRE MÉTÉOROLOGIQUE MENSUEL
MONTHLY METEOROLOGICAL SUMMARY

Montreal - Dorval (AUTO)

Mai 1996

May 1996

LAT 45° 28N LONG 73° 45W ALTITUDE 35 METRES (NMM) ÉLÉVATION 35 METRES (ASL)

HEURE NORMALE UTILISÉE DE L'EST
STANDARD TIME USED Eastern

DATE	TEMPÉRATURE / TEMPERATURE: MAXIMALE / MAXIMUM °C	MINIMALE / MINIMUM °C	MOYENNE / MEAN °C	DEGRÉS-JOURS / DEGREE-DAYS: DE CHAUFFAGE / HEATING Base 18°C	DE CROISSANCE / GROWING Base 5°C	DE RÉFRIGÉRATION / COOLING Base 18°C	HUMIDITÉ REL. / REL. HUMIDITY: MAXIMALE / MAXIMUM %	MINIMALE / MINIMUM %	GRÊLE / THUNDERSTORM	PRÉCIPITATIONS / PRECIPITATION: PLUIE / RAINFALL mm	NEIGE / SNOWFALL cm	PRÉCIP. TOTALE / TOTAL PRECIP. mm	NEIGE AU SOL / SNOW ON GROUND cm	VENTS / WINDS: VITESSE MAXIMALE / MAXIMUM SPEED km/h	DIRECTION / DIRECTION	VITESSE MAXIMALE / MAXIMUM SPEED km/h	DIRECTION / DIRECTION	DURÉE DU SOLEIL / BRIGHT SUNSHINE heures hours
1	16.7	4.8	10.8	7.2	5.8		83	42		0.5		0.5		20.0	SW	SW	35	9.9
2	12.6	4.4	8.5	9.5	3.5		82	40		TR		TR		21.4	SW*	W	37	12.0
3	18.4	1.8	10.1	7.9	5.1		80	31		TR		TR		10.3	SW	S	24	10.5
4	16.8	6.3	11.6	6.4	6.6		82	38		TR		TR		7.4	NE	NNE	20	8.4
5	14.2	4.4	9.3	8.7	4.3		60	24		TR		TR		14.9	N*	NNE*	22	13.1
6	14.1	3.7	8.9	9.1	3.9		64	31						11.2	W	SSW*	22	11.2
7	18.9	4.1	11.5	6.5	6.5		66	25						13.7	WSW	WSW	24	12.3
8	19.4	6.7	13.1	4.9	8.1		68	21						10.9	S	W	22	10.4
9	21.6	9.9	15.8	2.2	10.8		66	37						11.8	SSE	SSE	24	1.1
10	14.0	9.8	11.9	6.1	6.9		100	59		15.0		15.0		11.7	NE	NE*	24	
11	10.9	5.8	8.4	9.6	3.4		98	88		13.5		13.5		26.4	NNE	NNE*	31	
12	5.9	1.8	3.9	14.1			97	74		29.5	TR	29.5		24.0	N	NNE	41	
13	10.5	2.4	6.5	11.5	1.5		82	36						20.4	W	WSW	35	7.4
14	14.6	2.9	8.8	9.2	3.8		85	43		TR		TR		17.8	SW	SW*	28	11.1
15	19.0	5.8	12.4	5.6	7.4		88	27		TR		TR		9.6	SSW	SSW	19	13.3
16	19.3	8.3	13.8	4.2	8.8		92	27		0.5		0.5		13.7	SSE	SSE	37	4.2
17	19.9	9.6	14.8	3.2	9.8		98	45						7.8	S	SSW*	15	10.9
18	22.3	12.3	17.3	0.7	12.3		98	46	1	13.5		13.5		16.9	SE	SSE	37	3.9
19	24.6	14.5	19.6		14.6	1.6	100	68	1	1.5		1.5		11.8	S	ESE	20	2.6
20	26.2	16.3	21.3		16.3	3.3	97	70	1	10.5		10.5		18.3	SW	WSW	30	7.1
21	24.7	13.5	19.1		14.1	1.1	89	43		0.5		0.5		20.6	WSW	WSW	41	10.1
22	22.3	10.7	16.5	1.5	11.5		92	41		0.5		0.5		17.1	SW	W*	33	11.7
23	20.2	8.9	14.6	3.4	9.6		83	32		TR		TR		17.5	W	N	28	11.9
24	16.4	6.0	11.2	6.8	6.2		53	29						18.8	N	N*	31	13.9
25	15.7	1.6	8.7	9.3	3.7		83	35						15.3	WNW	WNW	35	13.2
26	19.9	2.1	11.0	7.0	6.0		90	23						11.6	W	W	26	12.2
27	20.0	4.1	12.1	5.9	7.1		77	27						9.0	N*	SW*	15	13.2
28	22.3	6.9	14.6	3.4	9.6		75	32		TR		TR		13.1	SW	NNE	28	9.2
29	12.1	1.0	6.6	11.4	1.6		97	40		6.0		6.0		12.0	N	N	22	7.9
30	19.3	5.1	12.2	5.8	7.2		85	42		0.5		0.5		13.5	N	N*	24	10.0
31	24.4	6.3	15.4	2.6	10.4		90	23						19.1	WSW	W*	31	13.9
	MOY. MEAN 18.0	MOY. MEAN 6.5	MOY. MEAN 12.3	TOTAL 183.7	TOTAL 226.4	TOTAL 6.0	MOY. MEAN 83	MOY. MEAN 39	TOTAL 3	TOTAL 92.0	TOTAL	TOTAL 92.0	[redacted]	MOY. MEAN 15.1	DOMINANTE PREVAILING SW	MAXIMALE MAXIMUM NNE*	41	TOTAL 276.6
NORMALE NORMAL	18.5	7.3	12.9	166.7	247.7	10.0	[redacted]	[redacted]	2	66.7	1.6	68.3	[redacted]	14.0	SW	[redacted]		228.7

SOMMAIRE DE DEGRÉS-JOURS/DEGREE-DAY SUMMARY

AU-DESSOUS DE 18°C / BELOW 18°C	ANNÉE EN COURS / THIS YEAR	ANNÉE PRÉCÉDENTE / PREVIOUS YEAR	NORMALE / NORMAL	AU-DESSUS DE 5°C / ABOVE 5°C	ANNÉE EN COURS / THIS YEAR	ANNÉE PRÉCÉDENTE / PREVIOUS YEAR	NORMALE / NORMAL
TOTAL DU MOIS / TOTAL FOR MONTH	183.7	154.8	166.7	TOTAL DU MOIS / TOTAL FOR MONTH	226.4	252.8	247.7
ACCUMULÉS DEPUIS LE 1ER JUILLET / ACCUMULATED SINCE JULY 1	4609.8	4177.2	4530.7	ACCUMULÉS DEPUIS LE 1ER AVRIL / ACCUMULATED SINCE APRIL 1	272.8	275.8	313.4

JOURS AVEC PRÉCIPITATIONS TOTALES / DAYS WITH TOTAL PRECIPITATION (mm)					JOURS AVEC CHUTE DE NEIGE / DAYS WITH SNOWFALL (cm)				
0.2 OU PLUS OR MORE	1.0 OU PLUS OR MORE	5.0 OU PLUS OR MORE	10.0 OU PLUS OR MORE	50.0 OU PLUS OR MORE	0.2 OU PLUS OR MORE	1.0 OU PLUS OR MORE	5.0 OU PLUS OR MORE	10.0 OU PLUS OR MORE	50.0 OU PLUS OR MORE
12	7	6	5						

Données non contrôlées/Data not validated

Les précipitations ont un seuil mesurable de 1,0 mm
Measurable threshold of precipitation is 1.0 mm

1. Journée climatologique/Climatological Day
2. Normale/Normal 1961-1990
3. TR=Trace
4. M=Manquant/Missing E=Estimé/Estimated
5. Pas de valeur/No entry=Pas d'événement/No occurence
6. C=Calme/Calm

Canada

RELEVES COMPARATIFS À:
COMPARATIVE RECORDS AT:

Montreal - Dorval (AUTO)

Mai 1996
May 1996

		CE MOIS-CI THIS MONTH		ANNÉE PRÉCÉDENTE PREVIOUS YEAR		NORMALE NORMAL	RECORD POUR LE MOIS RECORD FOR THE MONTH						NB. D'ANNÉES NO OF YEARS
							MAXIMUM ABSOLU HIGHEST EVER			MINIMUM ABSOLU LOWEST EVER			
		RELEVE VALUE	JOUR DAY	RELEVE VALUE	JOUR DAY		RELEVE VALUE	JOUR DAY	ANNÉE YEAR	RELEVE VALUE	JOUR DAY	ANNÉE YEAR	
TEMPERATURE MAXIMALE / HIGHEST TEMPERATURE (MAXIMUM)	°CELSIUS	26.2	20	26.4	31		33.9	19	1962				52
TEMPERATURE MINIMALE / LOWEST TEMPERATURE (MINIMUM)	°CELSIUS	1.0	29	-0.9	5					-4.4	2	1974	52
TEMPERATURE MENSUELLE MOYENNE / MEAN MONTHLY TEMPERATURE	°CELSIUS	12.3		13.1		12.9	16.4		1960	9.1		1967	52
HAUTEUR TOTALE MENSUELLE DE PLUIE / TOTAL MONTHLY RAINFALL	Millimètres (mm) / Millimetres (mm)	92.0		81.5		66.7	175.1		1945	15.2		1982	52
HAUTEUR TOTALE MENSUELLE DE NEIGE / TOTAL MONTHLY SNOWFALL	centimètres (cm) / centimetres (cm)					1.6	31.0		1963	0.0		1993	52
PRECIPITATION TOTALE MENSUELLE / TOTAL MONTHLY PRECIPITATION	Millimètres (mm) / Millimetres (mm)	92.0		81.5		68.3	175.3		1945	15.2		1982	52
NOMBRE DE JOURS AVEC PRECIPITATION MESURABLE / NO OF DAYS WITH MEASURABLE PRECIPITATION		12		15		13	21		1983	4		1977	52
HAUTEUR DE PLUIE MAXIMALE EN UNE JOURNÉE / GREATEST RAINFALL IN ON DAY	Millimètres (mm) / Millimetres (mm)	29.5	12	25.5	29		37.6	17	1945				52
HAUTEUR DE NEIGE MAXIMALE EN UNE JOURNÉE / GREATEST SNOWFALL IN ON DAY	centimètres (cm) / centimetres (cm)	TR	12				21.8	10	1963				52
PRECIPITATION MAXIMALE EN UNE JOURNÉE / GREATEST PRECIPITATION IN ONE DAY	Millimètres (mm) / Millimetres (mm)	29.5	12	25.5	29		37.6	17	1945				52
HAUTEUR DE PLUIE ENREGISTREE EN / MAXIMUM RAINFALL RECORDED IN													
5 MINUTES	Millimètres (mm) / Millimetres (mm)						15.5	22	1945				49
10 MINUTES	Millimètres (mm) / Millimetres (mm)						15.7	22	1945				49
15 MINUTES	Millimètres (mm) / Millimetres (mm)						16.3	22	1945				49
30 MINUTES	Millimètres (mm) / Millimetres (mm)						18.0	22	1983				49
60 MINUTES	Millimètres (mm) / Millimetres (mm)						22.0	22	1983				49
24 HEURES CONSÉCUTIVES / CONSECUTIVE HOURS	Millimètres (mm) / Millimetres (mm)						42.9	18-19	1969				52
VITESSE MOYENNE DU VENTS (km/h) / MEAN WIND SPEED (km/h)		15.1		13.9		14.0	20.0		1956	9.3		1968	41
VITESSE MAXIMALE (MOYENNE SUR 2 MIN.) (km/h) / MAXIMUM SPEED (2 MIN. MEAN) (km/h)		NNE 41	12	SSE 44	14		WSW 72	9	1964				52
POINTE DU VENT MAXIMALE (km/h) / MAXIMUM GUST SPEED (km/h)		NNE 59	12	WNW 63	6		W 123	22	1945				52
TOTAL DES HEURES INSOLATION / TOTAL HOURS OF SUNSHINE		276.6		244.8		228.7	331.2		1977	166.2		1976	22
PRESSION MOYENNE À LA STATION (kPa) / MEAN STATION PRESSURE (kPa)		101.09		100.87		100.98	101.45		1992	100.62		1985	52
PRESSION MAXIMAL À LA STATION (kPa) / GREATEST STATION PRESSURE (kPa)		102.64	7	102.25	28		103.32	29	1970				52
PRESSION MINIMALE À LA STATION (kPa) / LEAST STATION PRESSURE (kPa)		99.17	19	99.54	17					98.51	19	1976	52

DONNÉES CLIMATOLOGIQUES CE MOIS-CI POUR LES 10 DERNIÈRES ANNÉES
CLIMATOLOGICAL DATA THIS MONTH FOR THE PAST 10 YEARS

ANNÉE YEAR	TEMP. MAXIMALE MAXIMUM TEMP.	TEMP. MINIMALE MINIMUM TEMP.	TEMP. MOYENNE MEAN TEMP.	HAUTEUR DE PLUIE RAINFALL	HAUTEUR DE NEIGE SNOWFALL	PRECIP. TOTALE TOTAL PRECIP.	VITESSE MOYENNE DES VENTS MEAN WIND SPEED	VITESSE MAXIMALE DES VENTS MEAN WIND SPEED	HEURES INSOLATION SUNSHINE HOURS	DEGRES-JOURS DE CHAUFFE HEATING DEGREE-DAYS	DEGRES-JOURS DE CROISSANCE GROWING DEGREE-DAYS	DEGRES-JOURS DE REFRIGERATION COOLING DEGREE-DAYS	A.S.N. S.A.S.
1987	30.4	0.5	13.0	55.0		55.0	12.2	W 37	224.7	173.6	248.1	18.7	201.2
1988	26.9	2.0	14.8	50.2		50.2	12.3	SW 39	220.5	108.7	304.9	10.6	166.6
1989	30.8	3.0	14.5	83.2	TR	83.2	13.6	SW 46	180.5	124.4	294.9	16.3	205.0
1990	25.7	2.2	11.6	79.2		79.2	15.3	SW 43	190.1	198.8	204.4	0.2	198.4
1991	30.9	2.2	15.0	91.2		91.2	13.1	WSW 37	238.5	112.5	310.5	20.0	197.0
1992	29.4	-0.7	13.2	56.4		56.4	12.7	WSW 46	282.6	157.6	255.1	9.7	206.5
1993	27.1	2.2	13.0	86.7		86.7	13.6	SW 41	227.1	154.6	249.3	0.9	242.0
1994	28.2	-1.3	12.2	100.4	TR	100.4	14.3	WSW 48	227.4	186.4	222.8	6.1	274.4
1995	26.4	-0.9	13.1	81.5		81.5	13.9	SSE 44	244.8	154.8	252.8	4.6	186.7
1996	26.2	1.0	12.3	92.0		92.0	15.1	NNE 41	276.6	183.7	226.4	6.0	213.6

AVIS/NOTE

Température horaire
Hourly temperature

Montreal - Dorval (AUTO)

Mai 1996
May 1996

DATE	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22
1	73	71	72	69	60	68	74	83	88	102	107	116	132	147	149	154	160	137	123	97	97	107	109
2	93	89	98	89	90	80	57	58	62	72	78	91	97	97	104	107	114	112	112	104	91	72	70
3	67	53	64	75	41	48	80	104	114	128	137	146	160	170	165	176	175	173	151	132	117	116	107
4	90	92	76	82	70	75	89	92	108	114	123	139	151	162	156	156	155	156	147	140	125	127	115
5	105	95	82	72	61	50	49	55	66	74	85	95	103	114	123	134	142	132	118	93	97	92	82
6	70	57	62	58	44	41	46	55	72	85	99	108	110	123	121	131	134	134	129	111	84	83	84
7	59	42	54	44	51	54	64	79	95	110	135	175	175	180	183	175	180	170	159	154	133	121	115
8	100	102	97	96	75	68	94	113	128	141	151	164	176	182	188	190	184	185	175	162	153	145	140
9	134	125	142	138	107	103	103	102	119	134	147	152	182	193	199	198	191	175	174	159	149	146	141
10	136	132	134	128	116	105	100	99	103	107	116	123	130	131	133	130	132	130	127	126	124	118	118
11	113	109	97	95	90	83	82	84	84	83	76	76	76	76	79	83	80	80	78	74	71	67	64
12	61	59	49	34	28	26	22	18	23	30	27	30	31	36	35	37	37	41	42	44	44	44	47
13	45	25	34	46	41	43	45	49	58	67	75	85	90	99	96	97	102	97	93	88	58	52	48
14	63	51	45	43	45	48	52	77	89	98	106	112	125	131	139	135	118	134	131	127	118	116	110
15	90	79	66	70	69	76	86	100	115	124	135	149	162	177	181	184	185	183	183	148	152	149	135
16	130	114	105	101	91	91	106	126	145	160	167	175	178	178	154	138	132	124	120	116	112	110	107
17	108	105	102	100	100	98	109	121	134	142	151	164	165	175	179	187	195	190	181	177	161	152	148
18	150	142	129	135	152	143	160	165	187	191	191	198	210	210	219	219	219	219	201	181	162	161	157
19	150	149	150	149	153	154	163	168	168	183	217	209	225	241	242	239	238	237	228	219	215	195	198
20	183	189	186	185	195	195	176	181	190	220	223	212	241	245	251	247	251	249	223	199	197	197	195
21	190	191	185	181	175	174	172	174	184	195	201	200	213	229	243	238	239	236	225	206	173	151	159
22	145	149	141	146	122	134	139	145	162	174	186	205	209	222	219	211	197	182	180	162	142	135	134
23	133	133	125	99	100	101	118	130	147	153	163	172	174	M	199	200	194	188	185	173	160	148	157
24	128	108	99	86	70	62	67	74	76	85	97	113	125	137	151	150	161	148	149	134	117	99	76
25	83	67	37	44	27	28	68	76	87	95	117	129	142	142	146	146	142	141	142	126	104	89	102
26	67	51	29	38	41	51	80	95	125	149	163	165	187	193	191	194	188	191	174	146	128	132	149
27	77	99	84	67	55	65	86	106	126	147	167	173	184	193	196	198	193	183	190	179	167	158	146
28	110	118	127	121	122	121	122	135	150	162	173	178	202	209	213	211	203	200	203	186	152	167	140
29	94	69	57	43	13	24	48	57	68	76	90	100	108	104	88	104	66	73	59	49	53	61	58
30	56	53	54	59	62	72	76	86	98	117	124	145	150	164	167	172	188	189	174	157	143	119	118
31	116	108	78	67	71	91	105	127	144	156	179	205	229	235	227	237	238	232	228	204	187	175	163

Unités / Units: 0.1 °C M = Manquant /Missing

Lire / Read -123 = -12.3 °C -1 = -0.1 °C 0 = 0.0 °C 12 = +1.2 °C 123 = +12.3 °C

Heure normale locale: Est

Local standard time: Eastern

Vents horaires (km/h)
Hourly winds (km/h)

Montreal - Dorval (AUTO)

Mai 1996
May 1996

Heure normale locale: Est
Local standard time : Eastern

DATE	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Rafale max Peak Gust	heure time	jour day
1	SW 30	WSW 28	SW 19	SW 15	SSW 15	SSW 17	S 20	SSW 19	SW 33	SW 24	SW 24	SSW 13	SW 22	SW 19	SW 17	S 17	SSE 19	SW 35	WSW 33	SW 19	S 7	SSW 19	S 20	S 20	WSW 52	19	1
2	S 17	S 17	SSW 20	WSW 11	SW 24	SW 17	W 28	W 26	W 26	WSW 31	W 30	WSW 30	W 37	WNW 28	WSW 28	W 26	SW 28	SW 20	SW 17	SW 11	SSW 13	S 9	SSE 13	SSE 15	W 46	12	2
3	S 15	N 11	SE 7	E 6	C 0	N 4	ESE 6	SW 6	SW 13	SW 13	SW 17	SW 20	SW 17	WNW 15	SSW 4	W 9	SSW 11	C 0	S 24	SSE 17	SSE 11	S 9	SW 4	WNW 11	SE 41	19	3
4	W 9	W 13	NW 9	C 0	C 0	NNE 9	NE 15	NE 7	ENE 6	NE 7	NE 7	NNE 4	SE 6	C 0	SSE 11	S 13	SSW 11	SW 9	SSW 9	SW 7	S 4	SE 6	C 0	NE 11	NNE 31	1	4
5	NE 7	NNE 20	NNE 22	N 19	N 22	N 19	N 20	NNE 22	NNE 13	NE 7	NW 6	W 7	S 11	W 15	WSW 20	W 17	W 20	NW 15	NW 15	NW 13	N 11	NE 19	NE 17	NE 13	NNE 35	2	5
6	NE 9	ESE 6	NE 7	NE 6	NNE 6	N 7	N 7	N 9	N 4	C 0	NNE 9	C 0	SW 11	SW 11	SSW 20	SSW 13	SSW 22	SSW 19	SW 22	W 13	W 13	WSW 13	W 17	W 13			
7	W 15	WSW 11	SW 7	SSW 9	WSW 13	WSW 19	WSW 15	SW 15	SW 15	SSW 17	SSW 15	WSW 17	WSW 19	WSW 24	WSW 19	SSW 15	SW 20	SW 19	WSW 17	SSW 9	SSW 9	SSW 11	C 0	C 0	W 33	13	7
8	S 6	SW 19	SW 20	W 20	WSW 9	WSW 13	WSW 13	W 19	W 22	W 19	WSW 13	SW 17	SSW 13	SW 15	S 11	S 11	S 13	S 11	SSW 6	C 0	S 4	SSE 7	SW 6	C 0	WSW 31	3	8
9	C 0	C 0	NE 11	E 6	NNE 9	NNE 13	N 11	NNE 13	NNE 9	NNE 11	ESE 7	E 6	SE 17	SSE 24	M M	SSE 17	WSW 17	S 13	SE 15	SSE 17	SSE 11	SSE 11	SSE 9	S 13	SSW 37	17	9
10	S 6	S 6	S 6	SW 15	SSE 17	SE 11	SSE 13	SE 6	SE 6	SSE 9	SE 7	ESE 4	C 0	NE 6	E 6	SE 7	E 7	NE 7	NE 7	NE 13	NE 19	NE 22	NE 24	NNE 24	NNE 33	1	10
11	NNE 22	NNE 22	NNE 26	NNE 19	NNE 24	NNE 26	NNE 24	NNE 19	NNE 26	NNE 20	NNE 31	NNE 26	N 30	N 24	NNE 20	NNE 28	NNE 31	NNE 30	NNE 31	NNE 30	NNE 26	NNE 28	NNE 30	NNE 26	NNE 46	0	11
12	NNE 28	N 31	NNE 41	NNE 35	N 30	N 26	N 26	N 20	N 20	N 31	N 26	NNW 17	N 28	NNW 31	NNW 24	NNW 31	NW 30	NW 26	NW 17	WNW 19	WNW 19	WNW 22	WNW 22	WNW 15	NNE 59	3	12
13	NW 15	WNW 6	WSW 9	W 13	W 13	WNW 17	W 19	W 24	W 24	W 26	W 30	W 28	W 33	WSW 35	W 31	W 31	W 31	W 24	W 22	W 19	W 11	WSW 7	WSW 7	SW 13	WSW 46	14	13
14	SW 13	SW 9	WSW 6	SW 9	SW 11	SW 22	SW 19	SW 17	SW 22	SW 19	SW 28	SW 28	SW 26	SW 22	SW 26	SW 26	SW 9	S 13	S 22	SW 17	SW 11	SW 19	SW 22	WNW 17	W 59	16	14
15	NW 11	NNW 6	S 9	SSW 4	SSW 9	SSW 11	WSW 9	SW 9	WSW 7	S 11	S 9	SSW 9	SSW 15	SW 13	SSW 19	SSW 13	S 17	SSW 9	C 0	SSE 7	SE 6	ESE 9	SE 11	E 6			
16	E 7	ESE 11	ESE 11	ESE 9	SE 4	ESE 7	SE 7	ESE 9	SE 11	ESE 13	E 11	ESE 24	SE 28	S 24	SSE 37	S 22	SSE 20	SSE 19	SSE 13	SSE 13	SSE 13	SSE 7	S 7	S 7	S 50	14	16
17	SW 6	SW 7	SSW 7	SW 6	SW 6	WSW 7	W 4	W 7	W 9	SSW 11	SSW 11	SSW 15	S 13	S 15	SSW 7	SW 9	SSE 7	S 6	S 6	S 6	SSE 7	S 6	S 7	SSE 7			
18	SE 4	SSE 4	SSE 7	C 0	ENE 6	E 4	E 6	ESE 9	E 13	E 15	SE 22	SE 26	SE 24	SE 24	SE 19	SE 28	SE 26	SE 31	SE 37	E 7	E 19	SE 17	SSE 22	SE 17	SSE 56	19	18
19	SSE 15	SSE 11	S 11	SSW 6	S 11	SW 7	WSW 17	SW 11	SW 11	WSW 13	SW 13	S 9	S 11	SSW 11	SE 13	SE 19	SE 17	ESE 20	ENE 7	NE 19	ESE 15	SE 17	NE 6	SSW 6	N 54	19	19
20	S 7	SSE 7	S 9	WSW 6	WSW 20	WSW 13	SSW 19	SW 24	SW 19	SW 22	SW 26	SW 22	WSW 30	WSW 28	WSW 28	SW 19	W 22	SW 11	SW 17	SW 22	SW 15	SSW 13	SSW 11	SW 11	W 59	3	20
21	SW 15	SW 17	SW 20	SW 19	WSW 17	WSW 20	WSW 17	WSW 19	WSW 17	W 26	SW 28	SW 30	SW 30	WSW 20	WSW 30	WSW 41	WSW 33	WSW 35	WSW 26	W 19	W 11	WSW 9	W 6	SSW 7	W 52	17	21
22	SW 9	W 6	NNW 9	ENE 4	SW 6	SSW 11	SW 15	SW 17	SW 17	SW 15	SW 20	SW 19	SW 31	W 33	W 31	W 33	W 28	W 28	WNW 28	WNW 15	NW 11	NW 6	WNW 7	NW 7	WSW 50	14	22
23	W 9	WNW 11	W 11	W 9	W 9	W 11	WNW 17	WNW 17	W 17	NW 13	WSW 15	WSW 20	W 7	M M	WSW 22	W 20	WSW 24	W 26	W 20	W 17	W 11	NW 11	N 26	N 26	N 46	0	23
24	N 26	N 28	N 31	N 22	N 22	N 22	NNE 24	N 19	NNE 15	C 0	W 4	W 13	WSW 19	WSW 28	WNW 31	W 19	NW 28	W 20	NW 19	NNW 24	NNW 19	NNW 13	NNW 15	N 17	WSW 41	13	24
25	N 13	.. N 15	NW 15	NNW 15	NW 9	WNW 7	WNW 17	WNW 17	W 13	WNW 26	W 24	WNW 20	NW 28	WNW 28	WNW 35	NNW 31	WNW 20	NW 19	NW 17	NW 11	WNW 6	WSW 6	NNW 4	C 0	WNW 44	14	25
26	C 0	C 0	WSW 4	W 6	WSW 6	SW 7	W 7	W 9	W 7	WNW 13	W 26	W 19	W 15	N 20	WNW 22	N 20	WNW 20	NW 17	NW 17	WNW 9	W 7	NW 4	ENE 6	ENE 6	W 35	11	26
27	N 4	N 7	N 7	N 6	N 7	N 11	N 11	N 11	NNE 7	N 6	NNE 6	SSE 11	SW 15	S 15	S 13	S 15	SSW 11	SW 11	SSW 13	SSW 7	SSW 9	SSW 7	SSW 6	C 0			
28	S 6	SSW 6	SSW 7	SSW 6	SSW 9	SW 9	NW 4	WSW 7	SW 4	W 11	SW 7	WSW 9	WSW 17	SSW 11	WSW 17	SW 13	W 13	W 19	SW 13	SW 15	WNW 17	NNW 22	NNE 13	NNE 28	NNW 37	21	28
29	N 22	N 22	N 15	N 11	NW 9	WNW 6	NW 13	W 4	W 11	S 11	WNW 11	S 20	S 17	W 13	N 17	NNE 7	WNW 17	NE 19	N 22	N 7	WNW 6	E 6	W 9	WNW 9	W 39	16	29
30	N 15	N 13	N 13	N 11	N 13	N 17	N 15	N 15	N 13	N 24	NNE 24	NNE 15	N 13	NE 13	NNE 6	SW 15	W 15	W 22	SW 13	SE 19	W 11	W 7	WNW 9	WNW 7	N 35	9	30
31	WSW 6	SSW 9	WSW 7	WSW 9	SW 9	WSW 11	SW 17	SW 13	SSW 13	SSW 13	SSW 13	SSW 19	W 26	W 31	W 26	WSW 24	W 26	WSW 22	W 24	SW 31	SW 31	SW 26	SW 22	WSW 13	WSW 41	20	31

Avis/Note

C= Calme /Calm

M= Manquant /Missing

Points de rosée horaires — Montreal - Dorval (AUTO) — Mai 1996
Hourly dew points — May 1996

DATE	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	26	23	20	19	20	19	19	31	31	26	25	33	29	27	21	40	45	30	44	64	70	62	56	36
2	53	54	52	60	56	50	-4	-3	-8	-13	-11	0	-4	-8	-7	-19	-15	-18	-6	-2	13	8	9	2
3	-3	-5	-3	-8	-11	-8	-8	8	11	23	22	23	27	48	14	10	7	2	39	67	71	72	74	61
4	54	45	38	41	41	44	-18	-12	-1	23	21	25	35	34	43	37	13	35	39	44	63	66	69	3
5	22	11	-14	-13	-24	-22	-27	-28	-26	-20	-18	-6	4	-37	-20	-33	-58	-66	-53	-57	-67	-65	-76	-68
6	-67	-41	-65	-67	-32	-36	-39	-47	-56	-52	-49	-55	-37	-30	-29	-33	-27	-22	-15	-26	-29	-20	-10	-24
7	-12	-19	-23	-16	-12	-5	6	0	2	16	16	5	-16	-19	-4	-3	-25	-28	-11	-29	-10	2	-9	6
8	-1	4	2	5	12	13	28	34	45	53	50	60	49	31	-7	-39	-12	-8	-4	-11	19	17	29	8
9	33	19	16	8	35	41	42	37	39	29	26	45	M	60	61	54	40	57	49	48	45	43	52	52
10	57	58	56	81	74	84	87	95	101	106	113	117	121	125	128	128	128	125	124	126	123	117	115	112
11	110	107	94	90	84	75	68	71	69	65	68	65	64	69	72	76	73	72	63	67	64	60	60	60
12	57	54	39	24	20	20	16	14	17	22	20	24	23	25	25	23	23	19	21	20	22	15	5	12
13	4	2	7	-13	-15	-38	-34	-35	-22	-24	-30	-22	-25	-13	-34	-35	-34	-36	-45	-53	-28	-20	-17	11
14	14	13	15	12	3	1	3	7	14	24	18	21	32	26	33	13	44	29	19	24	27	20	13	38
15	54	55	48	47	27	31	35	29	41	48	50	43	26	34	26	24	21	14	-9	19	1	3	3	-3
16	-7	-3	3	11	14	23	37	36	52	31	35	8	-14	-1	31	81	90	90	90	90	89	90	91	90
17	90	93	96	97	94	94	97	92	84	90	92	99	92	99	79	68	76	69	84	79	78	96	97	94
18	84	91	93	83	75	80	90	98	100	83	99	89	102	93	108	97	97	109	130	139	148	150	151	149
19	145	146	148	147	152	154	159	164	165	169	172	173	175	180	192	185	176	178	184	183	181	178	180	176
20	174	179	174	180	182	186	166	166	169	187	186	179	190	196	192	195	192	196	203	178	181	180	183	176
21	172	176	162	159	152	150	153	153	154	144	146	148	157	154	122	113	111	102	113	99	93	94	95	113
22	118	124	120	109	109	116	116	114	115	116	115	116	108	85	85	85	93	76	65	79	71	83	88	83
23	79	73	70	66	72	68	69	70	73	49	60	63	50	M	56	58	55	48	49	61	68	79	-9	-19
24	-27	-34	-47	-57	-57	-51	-48	-41	-46	-52	-36	-22	-13	-18	-14	-22	-17	-13	-22	-36	-36	-25	-14	-31
25	-27	-28	-32	-42	-40	-29	-32	-33	-22	-15	-8	-4	2	-4	0	-8	-8	-13	-8	-11	1	5	1	19
26	17	25	8	23	22	20	42	30	36	-3	4	-6	29	-8	2	-15	-30	-13	-15	10	23	11	-23	-14
27	13	17	17	18	16	27	37	40	40	51	29	15	16	18	16	13	1	7	10	10	16	41	57	65
28	57	56	62	70	68	65	79	68	51	58	68	65	55	69	47	53	33	28	48	60	73	15	51	35
29	-6	-53	-67	-59	-41	-43	-37	-28	-22	-4	-11	-3	-9	-4	36	26	54	44	43	45	47	46	54	50
30	24	29	28	35	37	36	44	49	57	63	53	66	58	54	52	62	69	57	57	72	69	67	71	61
31	59	77	63	51	55	75	85	86	96	102	106	108	55	51	21	21	16	29	34	61	59	44	33	17

Unités / Units: 0.1 °C — M = Manquant / Missing

Humidités relatives horaires — Montreal - Dorval (AUTO) — Mai 1996
Hourly relative humidities — May 1996

DATE	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	72	71	69	70	75	71	68	70	67	59	57	57	50	44	42	46	46	48	58	80	83	74	70	75
2	76	79	73	82	79	81	65	65	61	55	53	53	49	48	46	41	41	40	44	48	58	64	65	63
3	61	66	62	56	69	67	54	51	49	49	46	43	41	44	36	33	32	31	47	65	73	74	80	75
4	78	72	77	75	82	81	47	48	47	53	50	46	46	42	47	45	38	44	48	52	66	66	73	44
5	56	56	51	55	54	60	58	55	52	51	48	49	50	34	37	31	24	25	30	34	31	32	32	35
6	37	49	40	40	58	57	54	48	40	37	35	31	35	34	35	32	33	34	37	38	45	48	52	52
7	60	64	58	65	64	66	66	57	52	52	44	32	27	26	28	30	25	26	31	28	37	44	42	53
8	49	51	51	53	64	68	63	58	57	55	51	50	43	37	27	21	26	27	30	31	40	42	47	39
9	50	48	42	41	61	65	66	64	58	49	44	49	M	42	41	39	37	46	44	48	50	50	55	54
10	59	61	59	73	75	87	92	97	99	99	98	96	94	96	97	99	97	97	98	100	99	99	98	99
11	98	99	98	97	96	95	91	92	90	88	95	93	92	95	95	95	95	95	90	95	95	95	97	97
12	97	97	93	93	94	96	96	97	96	94	95	96	94	92	93	91	91	86	86	84	86	81	74	80
13	75	85	82	65	67	56	56	54	56	52	47	47	44	46	40	39	38	39	37	36	54	60	63	70
14	71	76	81	80	74	72	71	61	59	60	54	53	53	49	49	43	60	49	46	49	54	52	51	65
15	78	85	88	85	75	73	70	61	60	60	56	49	40	38	35	34	33	32	27	42	36	37	40	37
16	39	44	49	54	58	62	62	54	54	42	41	32	27	30	44	68	76	80	82	84	86	87	90	88
17	89	92	96	98	96	97	92	82	72	71	68	65	62	61	52	46	46	45	53	53	58	69	71	71
18	65	71	79	71	60	66	63	65	57	50	55	49	50	47	49	46	46	50	64	76	91	93	96	97
19	97	98	99	99	99	100	97	97	98	92	76	80	73	69	74	72	68	70	76	80	81	90	89	93
20	94	94	93	97	92	95	94	91	88	82	80	81	73	74	70	73	70	72	88	88	90	90	93	87
21	89	91	86	87	86	86	89	87	83	72	71	72	70	63	47	45	45	43	49	50	59	69	66	83
22	84	85	87	78	92	89	86	82	74	69	63	57	52	41	42	44	51	50	47	58	62	71	74	73
23	70	67	69	80	83	80	72	67	61	50	50	49	44	M	39	39	40	40	41	48	54	63	32	32
24	34	37	35	36	40	44	44	44	42	37	39	39	38	34	32	30	29	33	31	30	34	42	53	40
25	46	51	61	53	61	66	49	46	46	46	42	40	38	37	37	35	36	35	36	39	49	56	49	64
26	70	83	86	90	87	80	77	64	55	35	34	31	35	26	28	24	23	25	28	40	49	44	30	35
27	64	57	63	71	76	77	71	64	56	53	40	34	32	31	30	29	27	31	30	32	36	46	55	65
28	70	66	65	71	70	69	75	64	52	50	50	47	38	40	34	36	32	32	36	44	59	36	55	61
29	50	41	40	47	67	61	54	54	53	57	49	49	44	47	70	58	92	82	89	97	96	90	97	93
30	80	84	83	85	84	78	80	78	76	69	62	59	54	48	47	48	46	42	46	57	61	70	73	69
31	68	81	90	90	90	90	87	76	73	70	62	54	32	30	26	24	23	26	28	39	43	42	42	42

Unités: pourcent (%) /Units: percent (%)

Environnement Canada Direction de l'environnement atmosphérique

Environment Canada Atmospheric Environment Branch

SOMMAIRE MÉTÉOROLOGIQUE MENSUEL
MONTHLY METEOROLOGICAL SUMMARY

Montreal - Dorval (AUTO)

Juin 1996

June 1996

LAT 45' 28N LONG 73' 45W ALTITUDE 0 METRES (NMM) ÉLÉVATION 0 METRES (ASL) HEURE NORMALE UTILISÉE DE L'EST STANDARD TIME USED Eastern

DATE	TEMPERATURE / TEMPERATURE MAXIMALE MAXIMUM °C	MINIMALE MINIMUM °C	MOYENNE MEAN °C	DEGRES-JOURS / DEGREE-DAYS DE CHAUFFE HEATING Base 18°C	DE CROISSANCE GROWING Base 5°C	DE REFROIDISSEMENT COOLING Base 18°C	HUMIDITE REL. / REL. HUMIDITY MAXIMALE MAXIMUM %	MINIMALE MINIMUM %	GRELE THUNDERSTORM	PRECIPITATIONS / PRECIPITATION PLUIE (AUTOMATIQUE) RAINFALL mm	NEIGE (AUTOMATIQUE) SNOWFALL cm	PRECIP TOTAL TOTAL PRECIP mm	NEIGE AU SOL SNOW ON GROUND cm	VENTS / WINDS VITESSE MOYENNE PREVALENT SPEED km/h	DIRECTION DOMINANTE PREVAILING DIRECTION	VITESSE MAXIMALE / GUST OVER 2 MIN & DIRECTION km/h	DIRECTION	RAF 2 MIN MEAN SPEED & DIRECTION	INSOLATION EFFECTIVE SUNSHINE HEURES HOURS
1	25.8	10.9	18.4		13.4	0.4	63	31						12.1	WSW	SSW*	20		13.0
2	28.6	10.8	19.7		14.7	1.7	80	33						10.8	SSE	SE*	20		11.4
3	25.9	14.1	20.0		15.0	2.0	88	38		1.5		1.5		17.1	SE	SE	28		7.9
4	24.5	14.6	19.6		14.6	1.6	97	57	1	3.5		3.5		8.3	S	N	15		4.5
5	22.2	13.6	17.9	0.1	12.9		96	55		1.0		1.0		21.3	SW	WSW	37		7.3
6	21.4	12.6	17.0	1.0	12.0		80	59						13.7	W	WSW*	22		5.2
7	18.3	11.7	15.0	3.0	40.0		100	80		11.0		11.0		10.0	NNE	NNE	20		
8	16.9	10.5	13.7	4.3	8.7		100	69		2.0		2.0		11.4	NNE	NNE	20		
9	21.9	14.1	18.0		13.0		97	76		17.0		17.0		9.9	NE	NNE	17		1.1
10	25.5	16.9	21.2		16.2	3.2	100	82	1	2.0		2.0		6.9	SE	S	19		1.2
11	28.5	16.2	22.4		17.4	4.4	100	72	1	6.0		6.0		6.5	S	NNW	15		7.2
12	27.5	16.9	22.2		17.2	4.2	100	67		0.5		0.5		7.9	S	SSW*	15		8.7
13	23.6	17.6	20.6		15.6	2.6	98	82	1	4.0		4.0		8.0	S	S	15		1.1
14	27.0	15.6	21.3		16.3	3.3	96	47		TR		TR		14.5	W	W*	24		7.5
15	25.4	13.2	19.3		14.3	1.3	91	43						13.9	SW*	W	31		9.7
16	22.5	9.3	15.9	2.1	10.9		96	47						6.2	SSW	NE*	11		13.6
17	27.6	13.2	20.4		15.4	2.4	91	46		TR		TR		11.9	NNE	WSW*	19		12.4
18	25.2	15.2	20.2		15.2	2.2	76	39						12.3	NNE	NE	19		12.0
19	27.4	15.7	21.6		16.6	3.6	83	50						11.5	SE	SSE	22		10.2
20	23.3	15.3	19.3		14.3	1.3	92	72		TR		TR		9.3	ESE	ESE*	15		1.4
21	25.3	14.5	19.9		14.9	1.9	97	52		0.6		0.6		17.5	W	W	35		7.2
22	17.7	13.6	15.7	2.3	10.7		99	83		1.5		1.5		10.7	NE	NE	19		0.1
23	20.8	14.2	17.5	0.5	12.5		100	57		1.5		1.5		15.8	W*	WNW*	30		8.7
24	22.3	13.2	17.8	0.2	12.8		86	62		TR		TR		9.2	NE	NNE*	15		2.2
25	23.4	9.8	16.6	1.4	11.6		97	48	1	3.5		3.5		14.4	NW	NW	28		7.2
26	22.9	9.0	16.0	2.0	11.0		83	46						17.2	WNW*	W	28		14.6
27	18.1	11.9	15.0	3.0	10.0		99	67		1.4		1.4		11.0	SW	WSW	19		4.0
28	23.6	12.0	17.8	0.2	12.8		100	47						8.0	S	S*	13		11.5
29	20.8	15.6	18.2		13.2	0.2	89	65		0.5		0.5		16.1	SSE	SE	30		
30	23.9	17.0	20.5		15.5	2.5	97	85	1	8.0		8.0		18.2	SSE	SE	26		1.4
--	MOY. 23.6 MEAN	MOY. 13.6 MEAN	MOY. 18.6 MEAN	TOTAL 20.1	TOTAL 408.7	TOTAL 38.8	MOY. 92 MEAN	MOY. 58 MEAN	TOTAL 6	TOTAL 65.5	TOTAL	TOTAL 65.5		MOY. 12.1 MEAN	DOMINANTE SE PREVALING	MAXIMALE WSW 37 MAXIMUM			TOTAL 192.3
NORMALE NORMAL	23.4	12.5	18.0	44.3	390.1	44.5			5	82.5	0	82.5		14.0	SW				245.1

SOMMAIRE DE DEGRÉS-JOURS/DEGREE-DAY SUMMARY

AU-DESSOUS DE 18°C BELOW 18°C	ANNEE EN COURS THIS YEAR	ANNEE PRECEDENTE PREVIOUS YEAR	NORMALE NORMAL	AU-DESSUS DE 5°C ABOVE 5°C	ANNEE EN COURS THIS YEAR	ANNEE PRECEDENTE PREVIOUS YEAR	NORMALE NORMAL
TOTAL DU MOIS TOTAL FOR MONTH	20.1	20.4	44.3	TOTAL DU MOIS TOTAL FOR MONTH	408.7	454.6	390.1
ACCUMULES DEPUIS LE 1ER JUILLET ACCUMULATED SINCE JULY 1	4629.9	4197.6	4575.0	ACCUMULES DEPUIS LE 1ER AVRIL ACCUMULATED SINCE APRIL 1	681.5	751.9	703.5

JOURS AVEC PRECIPITATIONS TOTALES DAYS WITH TOTAL PRECIPITATION (mm)

0.1 OU PLUS OR MORE	1.0 OU PLUS OR MORE	5.0 OU PLUS OR MORE	10.0 OU PLUS OR MORE	50.0 OU PLUS OR MORE
17	13	9	2	

JOURS AVEC CHUTES DE NEIGE DAYS WITH SNOWFALL (cm)

0.1 OU PLUS OR MORE	1.0 OU PLUS OR MORE	5.0 OU PLUS OR MORE	10.0 OU PLUS OR MORE	50.0 OU PLUS OR MORE

Données non contrôlées/Data not validated

Les precipitations ont un seuil mesurable de 1.0 mm
Measurable threshold of precipitation is 1.0 mm

1. Journée climatologique/Climatological Day
2. Normale/Normal 1961-1990
3. TR=Trace
4. M=Manquant/Missing E=Estimé/Estimated
5. Pas de valeur/No entry=Pas d'évènement/No occurence
6. C=Calme/Calm

Canada

RELEVES COMPARATIFS À:
COMPARATIVE RECORDS AT:

Montreal - Dorval (AUTO)

Juin 1996
June 1996

		CE MOIS-CI THIS MONTH		ANNEE PRECEDENTE PREVIOUS YEAR		NORMALE NORMAL	RECORD POUR LE MOIS RECORD FOR THE MONTH						
							MAXIMUM ABSOLU HIGHEST EVER			MINIMUM ABSOLU LOWEST EVER			NB. D'ANNEES NO OF YEARS
		RELEVE VALUE	JOUR DAY	RELEVE VALUE	JOUR DAY		RELEVE VALUE	JOUR DAY	ANNEE YEAR	RELEVE VALUE	JOUR DAY	ANNEE YEAR	
TEMPERATURE MAXIMALE HIGHEST TEMPERATURE (MAXIMUM)	°CELSIUS	28.6	2	32.2	19		35.0	30	1964				52
TEMPERATURE MINIMALE LOWEST TEMPERATURE (MINIMUM)	°CELSIUS	9.0	26	7.4	10					0.7	3	1986	52
TEMPERATURE MENSUELLE MOYENNE MEAN MONTHLY TEMPERATURE	°CELSIUS	18.6		20.2		18.0	20.3		1949	15.6		1958	52
HAUTEUR TOTALE MENSUELLE DE PLUIE TOTAL MONTHLY RAINFALL	Millimètres (mm) Millimetres (mm)	65.5		56.6		82.5	215.7		1943	18.6		1965	52
HAUTEUR TOTALE MENSUELLE DE NEIGE TOTAL MONTHLY SNOWFALL	centimètres (cm) centimetres (cm)					.0				0.0			52
PRECIPITATION TOTALE MENSUELLE TOTAL MONTHLY PRECIPITATION	Millimètres (mm) Millimetres (mm)	65.5		56.6		82.5	215.7		1943	18.6		1965	52
NOMBRE DE JOURS AVEC PRECIPITATION MESURABLE NO OF DAYS WITH MEASURABLE PRECIPITATION		17				13	18		1981	4		1995	52
HAUTEUR DE PLUIE MAXIMALE EN UNE JOURNEE GREATEST RAINFALL IN ON DAY	Millimètres (mm) Millimetres (mm)	17.0	9	49.2	3		61.6	8	1987				52
HAUTEUR DE NEIGE MAXIMALE EN UNE JOURNEE GREATEST SNOWFALL IN ON DAY	centimètres (cm) centimetres (cm)												52
PRECIPITATION MAXIMALE EN UNE JOURNEE GREATEST PRECIPITATION IN ONE DAY	Millimètres (mm) Millimetres (mm)	17.0	9	49.2	3		61.6	8	1987				52
HAUTEUR DE PLUIE ENREGISTREE EN MAXIMUM RAINFALL RECORDED IN													
5 MINUTES	Millimètres (mm) Millimetres (mm)						15.2	24	1962				50
10 MINUTES	Millimètres (mm) Millimetres (mm)						22.9	6	1963				50
15 MINUTES	Millimètres (mm) Millimetres (mm)						30.5	6	1963				50
30 MINUTES	Millimètres (mm) Millimetres (mm)						35.3	6	1963				50
60 MINUTES	Millimètres (mm) Millimetres (mm)						44.0	8	1987				50
24 HEURES CONSECUTIVES CONSECUTIVE HOURS	Millimètres (mm) Millimetres (mm)												
VITESSE MOYENNE DU VENT (KM/H) MEAN WIND SPEED (KM/H)		12.1		12.8		14.0	18.8		1958	9.2		1968	41
VITESSE MAXIMALE (MOYENNE SUR 2 MIN.) (KM/H) MAXIMUM SPEED (2 MIN. MEAN) (KM/H)		WSW 37	5	SSW 37	18		NE 66	22	1972				41
POINTE DU VENT MAXIMALE (KM/H) MAXIMUM GUST SPEED (KM/H)		SW 63	11	NNE 61	25		SSW 111	29	1957				38
TOTAL DES HEURES INSOLATION TOTAL HOURS OF SUNSHINE		192.3			313.5	245.1	313.5		1995	159.6		1990	22
PRESSION MOYENNE À LA STATION (kPa) MEAN STATION PRESSURE (kPa)		101.00		100.78		100.88	101.25		1967	100.58		1981	41
PRESSION MAXIMALE À LA STATION (kPa) GREATEST STATION PRESSURE (kPa)		102.05	2	102.24	16		102.82	5	1976				41
PRESSION MINIMALE À LA STATION (kPa) LEAST STATION PRESSURE (kPa)		99.79	22	98.80	11					97.95	29	1957	41

DONNÉES CLIMATOLOGIQUES CE MOIS-CI POUR LES 10 DERNIÈRES ANNÉES
CLIMATOLOGICAL DATA THIS MONTH FOR THE PAST 10 YEARS

ANNEE YEAR	TEMP MAXIMALE MAXIMUM TEMP	TEMP MINIMALE MINIMUM TEMP	TEMP MOYENNE MEAN TEMP	HAUTEUR DE PLUIE RAINFALL	HAUTEUR DE NEIGE SNOWFALL	PRECIP TOTALE TOTAL PRECIP	VITESSE MOYENNE DES VENTS MEAN WIND SPEED	VITESSE MAXIMALE DES VENTS MEAN WIND SPEED	HEURES INSOLATION SUNSHINE HOURS	DEGRES-JOURS DE CHAUFFE HEATING DEGREE-DAYS	DEGRES-JOURS DE CROISSANCE GROWING DEGREE-DAYS	DEGRES-JOURS DE REFRIGERATION COOLING DEGREE-DAYS	ASN SAS
1987	31.6	6.9	18.6	129.0		129.0	11.4	NNW 37	239.4	29.8	409.1	48.9	201.2
1988	33.4	4.6	17.1	72.0		72.0	12.5	NNE 43	257.3	77.3	363.6	50.9	166.6
1989	32.7	7.9	18.9	84.6		84.6	11.0	WSW 37	242.9	29.4	416.6	56.0	[illegible]
1990	28.9	4.3	18.1	68.8		68.8	12.9	WSW 52	159.6	41.1	392.2	43.3	198.4
1991	32.6	7.4	19.0	34.8		34.8	13.0	W 41	291.5	26.2	420.9	57.1	197.0
1992	28.7	6.5	17.7	76.4		76.4	12.7	SW 33	239.5	40.0	380.7	30.7	206.5
1993	30.0	5.1	17.6	93.4		93.4	12.7	W 37	230.7	49.1	377.1	36.2	242.0
1994	33.9	5.3	19.0	143.8		143.8	11.2	WSW 37	247.4	34.4	421.4	65.8	274.4
1995	32.2	7.4	20.2	56.6		56.6	12.8	SW 37	313.5	20.4	454.6	85.0	186.7
1996	28.6	9.0	18.6	65.5		65.5	12.1	WSW 37	192.3	20.1	408.7	38.8	213.6

AVIS/NOTE

Température horaire
Hourly temperature

Montreal - Dorval (AUTO)

Juin 1996
June 1996

DATE	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	[illegible]
1	132	125	112	117	111	118	130	149	166	174	195	211	225	247	248	254	247	243	239	208	185	183	161	1
2	151	148	125	128	110	135	152	160	189	221	238	243	265	274	275	280	275	268	250	240	226	200	196	1
3	163	167	150	153	146	144	162	179	199	219	229	224	223	236	249	254	223	219	211	201	180	170	160	1
4	160	158	156	155	154	155	M	157	162	171	184	192	213	219	229	245	226	216	178	179	181	176	170	1
5	160	147	147	150	146	151	153	163	165	179	196	206	213	210	213	208	198	180	182	181	174	169	164	1
6	149	139	132	134	140	138	141	144	151	159	170	177	190	198	196	204	203	213	198	188	185	178	183	1
7	177	179	172	166	166	161	156	147	144	142	143	147	149	152	153	157	157	157	157	156	151	147	143	1
8	133	133	121	128	132	137	137	140	142	146	154	159	160	147	156	163	166	165	164	155	153	159	165	1
9	162	163	157	151	143	142	143	154	167	181	191	200	202	206	208	219	219	217	216	215	210	209	204	2
10	199	196	191	189	183	186	190	194	202	212	217	222	240	254	242	226	223	222	230	227	213	207	203	1
11	190	174	173	195	195	187	188	204	215	232	253	263	271	282	271	261	268	260	199	200	198	183	183	1
12	184	184	186	182	176	183	189	204	217	229	243	251	260	267	255	254	259	257	254	249	228	217	221	2
13	209	202	195	193	191	194	197	197	196	201	201	203	203	213	223	228	208	195	202	193	190	190	188	1
14	180	179	175	171	171	174	176	183	195	198	204	222	236	239	259	266	265	256	253	230	192	184	176	1
15	174	169	168	162	167	164	172	180	184	196	219	230	241	243	253	241	241	232	217	202	170	183	170	1
16	152	152	106	120	104	131	136	153	160	171	189	190	194	201	214	212	216	223	216	201	181	180	168	1
17	148	143	156	147	160	151	175	195	209	217	231	247	258	267	268	274	274	271	256	246	237	215	212	2
18	189	178	168	155	152	158	175	188	199	211	219	226	233	240	244	244	245	244	236	228	218	196	199	2
19	181	171	171	171	165	161	177	195	212	224	241	247	258	260	263	257	256	252	233	216	202	185	178	1
20	165	163	161	160	156	170	183	186	196	200	205	205	223	226	224	228	225	225	224	223	220	212	215	2
21	199	194	195	193	191	197	203	213	221	219	236	233	249	249	230	237	233	236	233	220	199	184	167	1
22	151	145	140	139	139	138	142	154	152	154	153	164	173	175	162	162	174	177	169	170	168	162	157	1
23	149	148	149	154	160	162	170	175	173	181	181	182	184	190	194	196	203	203	188	175	169	157	145	1
24	148	146	145	138	134	132	135	138	144	153	158	168	172	184	195	204	216	218	212	199	192	179	174	1
25	157	153	146	136	135	137	144	146	149	167	166	191	202	226	222	199	190	203	197	185	167	160	144	1
26	100	101	97	107	100	100	114	125	137	152	167	175	188	195	210	218	227	221	218	206	179	163	150	1
27	132	128	134	143	144	139	145	163	171	173	177	171	168	165	153	157	165	178	175	163	145	150	144	1
28	128	136	135	134	132	133	141	158	175	183	194	203	214	216	225	231	231	227	212	198	190	186	181	1
29	165	171	181	169	160	163	160	164	168	169	168	177	174	184	186	195	200	201	203	203	203	202	198	1
30	183	182	180	175	174	172	180	182	185	181	185	194	195	199	203	218	230	236	223	211	205	200	193	1

Unités / Units: 0.1 °C M = Manquant /Missing

Lire / Read -123 = -12.3 °C -1 = -0.1 °C 0 = 0.0 °C 12 = +1.2 °C 123 = +12.3 °C

Heure normale locale: Est

Local standard time: Eastern

Vents horaires (km/h)
Hourly winds (km/h)

Montreal - Dorval (AUTO)

Juin 1996
June 1996

Heure normale locale: Est
Local standard time : Eastern

DATE	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Rafale max Peak Gust	heure time	jour day
1	WSW	WSW	WSW	WSW	WSW	SW	WSW	WSW	SW	SSW	SSW	SSW	SSW	SSW	SW	WSW	SSW	S	SSW	WSW	WSW	WSW	S	S			
	15	17	13	17	13	17	19	17	13	17	20	20	20	17	13	13	7	7	11	7	7	6	6	7			
2	S	C	C	SE	SSE	ESE	SE	SE	S	S	SW	WSW	S	ESE	SE	SSE	SSE	SE	SE	SSE	SSW	SSE	SSE	SSE	SE		
	4	0	0	7	4	7	6	9	4	6	13	6	7	11	20	19	20	19	15	13	13	11	11	9	31	16	2
3	SSE	SE	SSE	SE	SE	SE	SSE	SSE	SE	SE	SSE	SE	SSE	SE	SE	SE	SE	SE	SE	SE	SSE	SSE	SE	ESE	SE		
	13	15	13	15	13	13	17	20	19	13	13	22	19	15	22	26	22	20	24	28	20	19	13	7	35	17	3
4	E	E	E	E	E	ENE	M	N	NE	NE	NE	ESE	E	C	ESE	ESE	SSE	S	SSW	S	S	S	S	SSE			
	9	9	11	9	7	4	M	15	9	11	7	4	4	0	6	7	11	7	9	11	11	11	7	11			
5	SSE	SSE	SSE	SE	SE	SE	SW	SW	SW	SSW	SW	SW	SW	SW	WSW	SW	WSW	WSW	SW	SW	SW	SW	WSW	WSW	SW		
	9	9	7	6	7	7	6	6	9	13	22	30	31	33	37	35	33	22	24	30	30	26	26	26	54	15	5
6	WSW	W	WSW	WSW	WSW	W	W	W	W	W	W	WNW	S	S	SSW	WSW	W	W	W	WSW	C	SSE	SE	SE	W		
	24	22	22	19	19	22	22	20	22	17	17	17	13	15	17	15	13	13	13	4	0	6	4	4	33	2	6
7	SE	ENE	NNE	C	S	ESE	NE	NE	NNE	NE	NE	NNE	NNE	N	NNE	NNE	N	NNE	N	WNW	C	NNW	NNW	C			
	6	9	6	0	7	7	11	19	13	19	19	20	19	17	19	13	13	9	6	4	0	9	7	0			
8	C	NNE	C	N	NNE	NNE	NNE	NNE	NNE	NE	NE	ENE	NNE	N	NNE	NE	NE	NE	NNE	NNE	N	NNE	NE	NE			
	0	4	0	6	20	17	17	13	19	11	13	11	11	17	15	11	11	9	11	11	6	9	9	7			
9	NNE	NNE	N	NNE	N	N	NNE	NNE	NNE	NE	NE	NE	NE	E	ENE	ENE	E	E	E	NE	NE	ENE	NE	ENE			
	9	11	13	13	11	15	15	15	17	13	11	13	15	7	6	6	7	6	9	6	7	4	7	4			
10	SW	E	SE	ESE	SE	ESE	E	E	E	ESE	E	SE	SSE	SSE	S	SW	S	SSE	SSE	ESE	C	SE	SE	C			
	11	7	13	9	9	11	4	4	6	7	6	6	7	9	19	9	7	9	9	7	0	7	7	0			
11	C	C	NW	N	C	S	C	C	SSW	S	W	S	SW	SW	SSW	SSE	SE	S	S	NNW	SSW	S	SSW	C	SW		
	0	0	4	6	0	7	0	0	6	9	4	9	13	9	7	6	11	9	9	15	4	9	6	0	63	18	11
12	E	SSE	C	SE	C	ESE	C	C	SSE	S	SW	SW	S	S	S	SSW	SW	S	SSE	S	S	SW	SSW	SSW			
	6	6	0	7	0	4	0	0	6	9	9	9	9	13	9	11	11	11	9	11	7	11	4	15			
13	SSW	SSW	SW	SE	SE	S	SW	SSW	SW	WSW	S	SSW	S	S	SSE	SW	SSW	S	S	SSE	S	S	SSW	S			
	15	9	4	6	6	6	6	6	7	6	7	7	4	9	7	7	6	7	9	13	13	15	11	9			
14	S	SW	SW	SW	SW	SW	SW	WSW	W	WSW	SW	W	WSW	SSW	W	WSW	W	NW	W	W	W	W	W	W	W		
	11	11	11	11	9	7	13	17	19	19	13	19	15	19	24	22	24	20	13	11	13	11	13	9	35	16	14
15	SSE	SSW	SW	SW	SW	SSW	SW	SW	WSW	WNW	WSW	WSW	WSW	WSW	W	NW	W	WNW	WNW	WNW	NW	NNE	NNE	NNE	WNW		
	6	11	13	11	13	11	13	9	9	7	4	7	6	11	31	30	26	22	24	17	11	19	11	13	41	14	15
16	NNE	NE	C	N	NNE	NE	NE	NE	NE	SSW	WSW	C	SW	W	C	S	SW	W	SW	SSW	SSW	SSE	SSW	SSW			
	9	7	0	4	6	11	11	9	6	4	4	0	7	6	0	9	9	9	7	7	7	7	6	7			
17	W	WSW	SW	SSW	SW	WSW	WSW	SW	SW	SW	SSW	WSW	WSW	W	WSW	W	NW	NW	NNE	NNE	NNE	N	N	NNE	W		
	7	6	4	6	9	9	9	9	7	7	11	13	19	19	17	19	19	6	17	17	11	9	7	15	35	15	17
18	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NE	NE	NE	ENE	NE	ENE	NNE	ENE	NNE	ENE	ENE	NE	NE	NE	NNE	NNE	NE			
	13	13	15	9	13	13	15	17	17	19	9	17	13	17	11	13	11	9	11	13	11	9	7	7			
19	N	NNE	N	N	NNE	NNE	NNE	SE	ESE	ESE	ESE	ESE	SE	S	SSE	SSE	SE	ESE	SE	SE	SE	SE	SSE	SSE			
	9	9	9	9	11	9	7	4	4	7	9	9	9	9	7	22	20	15	17	20	15	15	13	15			
20	SSE	SSE	SE	SE	SE	SE	ESE	E	E	ESE	ESE	E	ESE	ESE	E	ESE	ESE	NNE	E	E	E	SE	ESE	E			
	11	9	7	9	9	7	9	6	9	13	15	11	13	13	15	11	11	7	9	6	6	11	6	7			
21	ESE	SE	SE	S	SSW	SW	WSW	W	W	WNW	W	WNW	WNW	W	W	W	NW	WNW	N	NE	NNE	NE	NNE	NNE	W		
	7	6	6	7	7	13	19	20	26	26	22	26	28	24	35	22	24	15	9	11	19	13	17	13	48	16	21
22	NE	NE	NE	NE	NE	NE	NE	NE	NE	E	SE	E	N	NNE	NE	NE	E	E	ESE	E	N	N	N	NNW			
	6	11	13	9	13	9	13	9	6	9	6	9	7	9	17	19	11	13	11	7	13	11	11	11			
23	NW	WNW	W	W	W	W	W	W	WNW	W	WNW	WNW	WNW	WNW	NW	NW	WNW	WNW	NW	NW	N	NNE	N	NNE	WNW		
	11	9	9	7	11	19	19	22	22	20	30	30	24	17	19	20	11	13	15	13	9	9	7	13	44	11	23
24	NE	NE	NE	NE	NE	NE	NE	NE	E	NE	ENE	ESE	E	E	C	NNE	SE	E	ESE	NNE	N	NNE	NE	NNE			
	9	11	9	11	9	11	7	11	6	11	9	11	9	9	0	6	9	9	7	15	7	15	15	9			
25	N	NE	N	NNW	N	N	N	NNE	N	N	NW	WNW	NNW	WNW	NW	WNW	WNW	W	W	NW	NW	NW	NW	NW	NW		
	9	6	9	4	9	13	6	6	6	11	13	11	20	20	17	22	11	26	20	28	22	19	19	17	46	19	25
26	NW	W	WNW	WNW	WNW	WNW	WNW	WNW	W	WNW	NW	NW	WNW	W	WNW	W	W	W	W	WNW	W	W	W	W	W		
	11	6	15	17	19	19	19	24	17	24	15	13	19	17	19	26	20	28	19	15	13	13	11	11	37	12	26
27	W	WNW	WNW	SW	SW	SW	SW	WSW	SW	W	NW	WNW	WNW	NW	WSW	WSW	SW	WSW	WSW	WSW	SW	SW	SW	SW			
	9	11	9	7	7	7	11	7	13	9	13	7	7	13	17	17	13	19	15	13	9	15	13	11			
28	WSW	E	S	SW	WNW	NW	NW	N	NNE	SSW	SSW	SW	S	S	SSE	SW	S	SSW	WSW	WSW	WSW	SSE	SSE	S			
	7	6	13	9	4	7	6	9	6	11	9	11	9	13	11	6	7	9	7	9	7	6	7	4			
29	W	SE	E	S	SSE	ESE	SSE	ESE	SE	S	SE	SE	SE	SE	SSE	SE	SE	SSE	SSE	SE	SSE	SSE	S	SSE	SE		
	7	4	6	7	13	13	7	17	17	15	19	19	22	30	26	24	19	13	19	13	15	11	13	15	39	14	29
30	SSE	SSE	SSE	SSE	SSE	SE	SSE	SSE	SSE	SE	SE	SSE	SSE	SSE	SSE	SE	SSE	SSE	SE	SE	SE	SE	SE	SE	SSE		
	15	19	19	22	22	20	22	22	17	20	26	22	15	13	11	20	19	20	20	15	17	15	13	13	35	10	30

Avis/Note

C= Calme /Calm

M= Manquant /Missing

Points de rosée horaires
Hourly dew points

Montreal - Dorval (AUTO)

Juin 1996
June 1996

DATE	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	19	19	27	35	44	51	55	60	75	76	90	95	91	92	96	77	71	64	58	74	60	46	85	80
2	80	79	78	82	77	71	92	94	103	96	110	127	123	115	96	116	116	113	107	100	93	100	88	96
3	99	102	104	103	92	86	91	97	108	116	130	113	119	131	122	117	91	71	83	92	114	127	134	137
4	140	138	138	138	140	142	M	146	144	153	160	157	160	157	164	155	145	161	167	171	176	169	162	154
5	152	142	141	142	138	140	144	145	145	148	138	134	126	117	120	120	109	122	113	108	111	108	111	108
6	107	100	98	98	95	97	98	103	110	115	127	128	133	134	125	132	129	129	128	132	120	134	124	123
7	119	122	138	146	145	146	148	137	139	136	138	138	144	146	146	150	149	147	147	149	147	146	141	140
8	133	133	121	128	111	90	88	90	90	97	101	102	112	123	134	140	139	141	139	141	143	144	141	141
9	140	137	134	123	118	113	111	120	133	144	149	158	164	166	166	175	174	178	177	182	183	186	189	192
10	191	191	189	183	179	180	180	181	186	192	203	208	218	220	211	208	212	215	220	213	204	206	202	193
11	190	173	170	195	195	187	188	203	209	214	223	216	225	227	220	230	222	217	191	191	180	174	176	182
12	181	182	182	182	176	182	187	194	191	194	194	203	203	200	192	191	212	210	203	206	200	195	186	189
13	194	191	190	187	187	190	189	189	192	197	197	197	186	202	205	196	176	178	177	180	176	181	183	177
14	174	170	164	163	164	167	169	174	179	181	186	187	190	196	194	184	176	135	138	136	141	128	121	120
15	138	138	133	134	153	149	151	153	148	148	160	150	164	163	135	106	107	104	101	102	106	87	83	76
16	74	74	81	82	77	85	90	98	98	96	110	105	99	96	97	100	115	114	119	111	103	109	125	131
17	130	136	141	130	138	130	137	144	153	158	166	169	155	170	172	167	151	145	141	129	123	127	131	110
18	116	112	109	109	111	107	107	109	110	109	111	104	106	108	100	110	98	98	100	99	100	112	101	96
19	103	116	121	118	113	112	127	142	148	165	168	178	175	177	164	163	154	141	138	133	132	130	130	132
20	134	135	137	136	137	144	150	151	158	160	163	170	176	176	170	175	176	180	180	183	186	181	182	180
21	177	180	181	184	186	191	196	198	180	153	167	145	146	145	148	151	143	153	154	159	159	155	146	138
22	125	121	122	121	121	119	121	126	125	129	143	150	154	152	151	152	157	164	164	164	167	161	155	151
23	148	146	149	152	155	153	152	147	138	136	128	124	124	128	119	114	121	114	108	104	100	102	94	93
24	79	80	85	84	86	77	84	88	90	101	101	112	117	125	131	141	148	141	143	141	144	135	128	130
25	132	130	126	129	130	132	132	130	137	135	138	136	115	110	109	98	118	114	120	86	81	71	74	72
26	71	71	69	68	63	66	61	61	68	68	80	80	84	93	97	101	106	99	96	90	95	94	91	90
27	90	87	90	110	113	109	110	117	118	119	115	128	131	126	132	138	132	126	132	130	128	135	134	137
28	127	132	135	134	132	132	134	141	139	145	149	136	125	122	119	112	113	108	106	115	114	117	116	105
29	120	125	115	117	126	128	132	138	138	144	149	148	141	140	137	139	151	160	164	164	167	167	153	160
30	156	154	156	161	162	165	162	163	166	170	176	179	187	190	194	199	208	210	201	192	191	187	182	181

Unités / Units: 0.1 °C

M = Manquant / Missing

Humidités relatives horaires
Hourly relative humidities

Montreal - Dorval (AUTO)

Juin 1996
June 1996

DATE	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	46	48	56	57	63	63	60	55	55	53	51	47	42	37	38	32	32	32	31	42	44	40	61	61
2	63	63	73	74	80	65	67	65	57	45	45	48	41	37	33	36	37	38	41	41	43	53	50	57
3	66	65	74	72	70	68	63	59	56	52	54	49	52	52	45	42	43	38	44	49	65	76	85	87
4	88	88	89	90	91	92	M	93	89	89	86	80	72	68	67	57	60	71	93	95	97	96	95	96
5	95	97	96	95	95	93	94	89	88	82	69	63	58	55	55	57	56	69	64	62	66	67	71	71
6	76	77	80	79	74	76	75	76	76	75	76	73	70	67	64	63	62	59	64	70	66	75	68	68
7	69	69	80	88	87	91	95	94	97	96	97	94	97	96	96	96	95	94	94	96	97	99	99	100
8	100	100	100	100	87	73	72	72	71	72	71	69	73	86	87	86	84	86	85	91	94	91	86	84
9	87	85	86	83	85	83	81	80	80	79	77	77	79	78	77	76	76	79	78	82	85	87	91	93
10	95	97	99	96	98	96	94	92	91	88	92	92	88	82	83	90	94	96	94	92	95	99	99	100
11	100	99	98	100	100	100	100	99	96	90	83	75	76	72	74	83	76	77	95	95	89	94	96	96
12	98	99	98	100	100	99	99	94	85	81	74	75	71	67	68	68	75	75	73	77	84	87	81	84
13	91	93	97	96	98	98	95	95	98	98	98	96	90	93	90	82	82	90	86	92	92	95	97	96
14	96	94	93	95	96	96	96	94	90	90	89	81	75	77	67	61	58	47	49	55	72	70	70	70
15	79	82	80	83	91	91	87	84	80	74	69	61	62	61	48	43	43	44	48	53	66	53	57	56
16	60	60	85	78	83	74	74	70	67	61	60	58	54	51	47	49	53	50	54	56	60	63	76	79
17	89	96	91	90	87	87	78	72	70	69	67	62	53	55	56	52	47	46	49	48	49	57	60	53
18	63	65	68	74	76	72	64	60	56	52	50	46	45	43	40	43	39	40	42	44	47	58	53	51
19	60	70	72	71	71	73	73	71	67	69	64	66	60	60	55	56	53	50	55	59	64	70	73	78
20	82	83	86	86	88	85	81	80	79	78	77	80	75	73	72	72	74	76	76	78	81	82	82	84
21	87	92	92	95	97	96	96	91	78	66	65	58	53	52	60	59	57	60	61	68	78	83	87	88
22	84	86	89	89	89	88	87	83	84	85	94	91	89	86	93	94	90	92	97	96	99	99	99	99
23	99	99	100	99	97	94	89	84	80	75	71	69	68	67	62	59	59	57	60	63	64	70	71	68
24	63	65	67	70	73	69	71	72	70	71	69	70	70	68	67	67	65	62	65	69	74	75	74	78
25	85	86	88	96	97	97	92	90	93	81	84	70	57	48	49	52	63	57	61	52	57	55	63	68
26	82	82	83	77	78	79	70	65	63	57	56	54	51	52	48	47	46	46	46	47	58	64	68	74
27	76	76	75	81	82	82	80	74	71	71	67	76	79	78	87	88	81	72	76	81	90	91	94	98
28	99	97	100	100	100	99	96	90	79	79	75	65	57	55	51	47	47	47	51	59	61	64	66	61
29	75	74	65	71	80	80	83	85	82	85	89	83	81	76	73	70	73	77	78	78	80	80	75	84
30	84	84	86	91	93	96	89	89	89	93	95	97	95	95	95	89	87	85	87	89	92	92	93	97

Unités: pourcent (%) /Units: percent (%)

Environnement Canada Division de l'environnement atmosphérique

Environment Canada Atmospheric Environment Branch

SOMMAIRE MÉTÉOROLOGIQUE MENSUEL
MONTHLY METEOROLOGICAL SUMMARY

Montreal - Dorval (AUTO)

Juillet 1996

July 1996

LAT 45° 28N LONG 73° 45W ALTITUDE 36 METRES (NMM) ÉLÉVATION 36 METRES (ASL)

HEURE NORMALE UTILISÉE DE L'EST
STANDARD TIME USED Eastern

DATE	TEMPERATURE / TEMPERATURE MAXIMALE MAXIMUM °C	MINIMALE MINIMUM °C	MOYENNE MEAN °C	DEGRES-JOURS / DEGREE-DAYS DE CHAUFFAGE HEATING Base 18 °C	DE CROISSANCE GROWING Base 5 °C	DE REFROIDISSEMENT COOLING Base 18 °C	HUMIDITE REL. / REL. HUMIDITY MAXIMALE MAXIMUM %	MINIMALE MINIMUM %	CHAUD TRANSBORDEUR	PRECIPITATIONS / PRECIPITATION PLUIE (PARTIELLE) RAINFALL mm	NEIGE (PARTIELLE) SNOWFALL cm	PRECIP TOTAL TOTAL PRECIP mm	NEIGE AU SOL SNOW ON GROUND cm	VENTS / WINDS VITESSE MOYENNE AVERAGE SPEED km/h	DIRECTION DOMINANTE PREVAILING DIRECTION	VITESSE MAXIMALE MAX GUST 2 MIN & DIRECTION km/h	MAX 2 MIN MEAN SPEED & DIRECTION	INSOLATION EFFECTIVE BRIGHT SUNSHINE HEURES HOURS
1	28.1	18.7	23.4		18.4	5.4	81	44		TR		TR		19.6	SW	W	30	13.7
2	27.9	17.3	22.6		17.6	4.6	89	50						11.2	SSW	SSW	19	11.5
3	24.3	17.8	21.1		16.1	3.1	88	67						16.5	NE*	NNE*	28	2.5
4	18.1	15.6	16.9	1.1	11.9		98	91		20.5		20.5		19.7	N	NNE	30	0.0
5	26.1	14.3	20.2		15.2	2.2	91	45		1.0		1.0		19.7	W	W*	30	11.8
6	23.0	13.6	18.3		13.3	0.3	87	49		0.5		0.5		20.0	WSW	W*	33	11.0
7	24.1	11.8	18.0		13.0		93	55		0.5		0.5		9.6	SW	SSE*	15	5.7
8	25.4	16.3	20.9		15.9	2.9	100	55		TR		TR		14.0	W*	SW	30	12.2
9	24.9	13.8	19.4		14.4	1.4	90	52		TR		TR		17.5	SW	SW	31	13.0
10	21.1	12.9	17.0	1.0	12.0		94	60						19.9	W*	W	35	9.2
11	25.3	13.7	19.5		14.5	1.5	90	54		TR		TR		20.6	SW	SW	30	12.2
12	27.5	15.3	21.4		16.4	3.4	77	44						8.9	SSE	SE	20	7.3
13	24.0	16.7	20.4		15.4	2.4	99	74						11.5	SE	SE	19	0.0
14	27.6	17.2	22.4		17.4	4.4	99	62	1	5.0		5.0		10.1	SE	SE	19	6.9
15	24.7	17.6	21.2		16.2	3.2	100	81		24.0		24.0		15.8	ESE	SW	30	0.1
16	25.8	15.9	20.9		15.9	2.9	96	69	1	24.0		24.0		20.8	SW	SW*	26	7.4
17	27.6	17.5	22.6		17.6	4.6	89	53						19.1	WSW	W*	26	12.7
18	28.4	16.8	22.6		17.6	4.6	96	60						10.3	SW	SSW*	15	10.6
19	23.0	14.3	18.7		13.7	0.7	98	67		11.0		11.0		17.0	SE	NW	39	1.7
20	20.6	13.9	17.3	0.7	12.3		76	48						27.8	WNW	WNW	41	0.3
21	25.5	13.4	19.5		14.5	1.5	83	38						17.5	WNW	WNW*	26	14.4
22	26.6	11.9	19.3		14.3	1.3	97	42						10.1	WSW*	S*	19	13.6
23	25.7	16.1	20.9		15.9	2.9	95	60						9.4	SSE	SSE	24	4.5
24	27.6	16.1	21.9		16.9	3.9	98	51		TR		TR		10.9	SSE	SE	19	13.6
25	26.5	18.4	22.5		17.5	4.5	95	69	1	7.5		7.5		10.4	SE*	WNW	28	3.9
26	25.8	17.4	21.6		16.6	3.6	94	58						13.5	W	W*	24	11.3
27	23.6	13.9	18.8		13.8	0.8	93	59						14.5	W*	W*	26	9.9
28	24.4	12.3	18.4		13.4	0.4	96	41						8.3	WSW	WSW	17	12.8
29	26.2	12.1	19.2		14.2	1.2	98	48						10.3	ESE	ESE	20	12.7
30	22.4	18.5	20.5		15.5	2.5	92	67		4.0		4.0		17.2	SE	SE*	22	0.0
31	21.0	17.0	19.0		14.0	1.0	97	79	1	8.0		8.0		16.2	SE	SE	26	0.8
	MOY. MEAN 24.9	MOY. MEAN 15.4	MOY. MEAN 20.2	TOTAL 2.8	TOTAL 471.4	TOTAL 71.2	MOY. MEAN 92	MOY. MEAN 57	TOTAL 4	TOTAL 106.0	TOTAL	TOTAL 106.0		MOY. MEAN 15.1	DOMINANTE PREVAILING WSW	MAXIMALE MAXIMUM WNW	41	TOTAL 247.3
NORMALE NORMAL	26.2	15.4	20.8	9.1	491.2	97.3			7	85.6	.0	85.6		12.0	SW			275.9

SOMMAIRE DE DEGRÉS-JOURS/DEGREE-DAY SUMMARY

AU-DESSOUS DE 18°C / BELOW 18°C	ANNÉE EN COURS THIS YEAR	ANNÉE PRÉCÉDENTE PREVIOUS YEAR	NORMALE NORMAL	AU-DESSUS DE 5°C / ABOVE 5°C	ANNÉE EN COURS THIS YEAR	ANNÉE PRÉCÉDENTE PREVIOUS YEAR	NORMALE NORMAL
TOTAL DU MOIS / TOTAL FOR MONTH	2.8	0.0	9.1	TOTAL DU MOIS / TOTAL FOR MONTH	471.4	531.6	491.2
ACCUMULÉS DEPUIS LE 1ER JUILLET / ACCUMULATED SINCE JULY 1	2.8	0.0	9.1	ACCUMULÉS DEPUIS LE 1ER AVRIL / ACCUMULATED SINCE APRIL 1	1152.9	1283.5	1194.7

JOURS AVEC PRÉCIPITATIONS TOTALES / DAYS WITH TOTAL PRECIPITATION (TPTI)

0.1 OU PLUS OR MORE	1.0 OU PLUS OR MORE	5.0 OU PLUS OR MORE	10.0 OU PLUS OR MORE	50.0 OU PLUS OR MORE
11	9	8	4	

JOURS AVEC CHUTES DE NEIGE / DAYS WITH SNOWFALL (STI)

0.1 OU PLUS OR MORE	1.0 OU PLUS OR MORE	5.0 OU PLUS OR MORE	10.0 OU PLUS OR MORE	50.0 OU PLUS OR MORE

Données non contrôlées/Data not validated

Les precipitations ont un seuil mesurable de 1,0 mm
Measurable threshold of precipitation is 1,0 mm

1. Journée climatologique/Climatological Day
2. Normale/Normal 1961-1990
3. TR=Trace
4. M=Manquant/Missing E=Estimé/Estimated
5. Pas de valeur/No entry=Pas d'événement/No occurance
6. C=Calme/Calm

Canada

RELEVES COMPARATIFS À:
COMPARATIVE RECORDS AT:

Montreal - Dorval (AUTO) Type B Juillet 1996
July 1996

	CE MOIS-CI THIS MONTH		ANNÉE PRÉCÉDENTE PREVIOUS YEAR		NORMALE NORMAL	RECORD POUR LE MOIS RECORD FOR THE MONTH						
						MAXIMUM ABSOLU HIGHEST EVER			MINIMUM ABSOLU LOWEST EVER			No. D'ANNÉES NO OF YEARS
	RELEVE VALUE	JOUR DAY	RELEVE VALUE	JOUR DAY		RELEVE VALUE	JOUR DAY	ANNÉE YEAR	RELEVE VALUE	JOUR DAY	ANNÉE YEAR	
TEMPERATURE MAXIMALE / HIGHEST TEMPERATURE (MAXIMUM) °CELSIUS	28.4	18	32.4	14		35.6	22	1955				52
TEMPERATURE MINIMALE / LOWEST TEMPERATURE (MINIMUM) °CELSIUS	11.8	7	11.5	4					6.1	3	1982	52
TEMPERATURE MENSUELLE MOYENNE / MEAN MONTHLY TEMPERATURE °CELSIUS	20.2		22.2		20.8	23.8		1955	18.7		1992	52
HAUTEUR TOTALE MENSUELLE DE PLUIE / TOTAL MONTHLY RAINFALL Millimètres (mm) Millimetres (mm)	106.0		122.1		85.6	182.6		1980	30.0		1989	52
HAUTEUR TOTALE MENSUELLE DE NEIGE / TOTAL MONTHLY SNOWFALL Centimètres (cm) Centimetres (cm)					.0							52
PRECIPITATION TOTALE MENSUELLE / TOTAL MONTHLY PRECIPITATION Millimètres (mm) Millimetres (mm)	106.0		122.1		85.6	182.6		1980	30.0		1989	52
NOMBRE DE JOURS AVEC PRECIPITATION MESURABLE / NO OF DAYS WITH MEASURABLE PRECIPITATION	11		15		12	20		1980	6		1955	52
HAUTEUR DE PLUIE MAXIMALE EN UNE JOURNEE / GREATEST RAINFALL IN ON DAY Millimètres (mm) Millimetres (mm)	24.0	15	36.2	23		57.4	14	1987				52
HAUTEUR DE NEIGE MAXIMALE EN UNE JOURNEE / GREATEST SNOWFALL IN ON DAY Centimètres (cm) Centimetres (cm)							31	1993				52
PRECIPITATION MAXIMALE EN UNE JOURNEE / GREATEST PRECIPITATION IN ONE DAY Millimètres (mm) Millimetres (mm)	24.0	15	36.2	23		57.4	14	1987				52
HAUTEUR DE PLUIE ENREGISTREE EN: / MAXIMUM RAINFALL RECORDED IN												
5 MINUTES Millimètres (mm) Millimetres (mm)			5.8	23		15.9	18	1987				50
10 MINUTES Millimètres (mm) Millimetres (mm)			10.3	23		23.3	18	1987				50
15 MINUTES Millimètres (mm) Millimetres (mm)			13.4	23		27.0	18	1987				50
30 MINUTES Millimètres (mm) Millimetres (mm)			17.3	23		30.9	14	1987				50
60 MINUTES Millimètres (mm) Millimetres (mm)			20.2	23		41.9	2	1975				50
24 HEURES CONSECUTIVES / CONSECUTIVE HOURS Millimètres (mm) Millimetres (mm)			36.2	23								
VITESSE MOYENNE DU VENT (km/h) / MEAN WIND SPEED (km/h)	15.1		12.1		12.0	17.8		1975	6.3		1988	41
VITESSE MAXIMALE MOYENNE SUR 2 MIN (km/h) / MAXIMUM SPEED (2 MIN. MEAN) (km/h)	WNW 41	20	WSW 54	20		WSW 58	11	1956				41
POINTE DU VENT MAXIMALE (km/h) / MAXIMUM GUST SPEED (km/h)	WSW 63	16	WSW 72	6		WNW 126	2	1975				38
TOTAL DES HEURES INSOLATION / TOTAL HOURS OF SUNSHINE	247.3		260.5		275.9	316.7		1982	230.8		1992	24
PRESSION MOYENNE À LA STATION (kPa) / MEAN STATION PRESSURE (kPa)	100.64				100.93	101.21		1968	100.69		1980	41
PRESSION MAXIMALE À LA STATION (kPa) / GREATEST STATION PRESSURE (kPa)	102.09	29				102.72	2	1981				41
PRESSION MINIMALE À LA STATION (kPa) / LEAST STATION PRESSURE (kPa)	99.04	19							98.97	12	1976	41

DONNEES CLIMATOLOGIQUES CE MOIS-CI POUR LES 10 DERNIERES ANNEES
CLIMATOLOGICAL DATA THIS MONTH FOR THE PAST 10 YEARS

ANNÉE YEAR	TEMP MAXIMALE MAXIMUM TEMP	TEMP MINIMALE MINIMUM TEMP	TEMP MOYENNE MEAN TEMP	HAUTEUR DE PLUIE RAINFALL	HAUTEUR DE NEIGE SNOWFALL	PRECIP TOTALE TOTAL PRECIP	VITESSE MOYENNE DES VENTS MEAN WIND SPEED	VITESSE MAXIMALE DES VENTS MEAN WIND SPEED	HEURES INSOLATION SUNSHINE HOURS	DEGRES-JOURS DE CHAUFF HEATING DEGREE-DAYS	DEGRES-JOURS DE CROISSANCE GROWING DEGREE-DAYS	DEGRES-JOURS DE REFRIGERATION COOLING DEGREE-DAYS	A S N E A S E
1987	33.6	8.4	21.5	131.0		131.0	10.5	WNW 37	296.0	8.7	512.5	118.2	
1988	33.8	9.5	22.5	31.2		31.2	6.3	SW 31	237.9	6.4	541.4	144.8	
1989	33.4	10.2	21.7	30.0		30.0	10.1	WNW 33	316.6	0.8	517.0	114.8	
1990	31.0	8.4	21.1	132.4		132.4	11.0	SW 37	277.7	8.7	499.7	105.4	
1991	33.3	8.9	21.2	85.4		85.4	11.1	NW 30	305.1	4.0	502.3	103.3	
1992	28.3	7.1	18.7	137.2		137.2	12.0	WSW 37	230.8	17.5	423.6	38.1	
1993	33.5	11.7	21.5	90.2		90.2	11.1	W 37	257.7	2.1	511.9	111.0	
1994	32.7	11.5	21.8	50.6		50.6	11.4	SW 32	261.5	0.4	520.9	118.3	
1995	32.4	11.5	22.2	122.1		122.1	12.1	WSW 54	267.5	0.0	531.6	128.6	
1996	28.4	11.8	20.2	106.0		106.0	15.1	WNW 41	247.3	2.8	471.4	71.2	

AVISNOTE

Température horaire
Hourly temperature

Montreal - Dorval (AUTO) Type B

Juillet 1996
July 1996

DATE	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22
1	199	211	208	204	199	191	202	211	222	229	240	242	253	263	275	276	276	273	259	247	238	230	225
2	209	190	176	182	175	177	197	211	222	226	239	249	262	272	263	271	266	260	247	240	237	225	217
3	219	200	211	195	190	193	193	193	195	205	204	208	219	225	240	235	231	223	213	210	203	198	195
4	186	178	174	170	168	164	163	165	164	170	171	172	174	181	178	175	172	173	169	167	167	165	165
5	157	159	159	154	147	147	161	174	189	205	222	235	241	250	256	257	259	237	231	222	221	212	205
6	193	202	192	195	198	193	198	201	201	205	206	215	216	213	211	213	226	219	220	205	164	153	144
7	150	142	144	139	128	135	168	174	180	195	198	210	223	236	234	236	216	209	202	205	207	209	199
8	189	193	188	170	172	174	196	197	206	212	228	232	231	236	246	254	249	245	239	222	207	199	206
9	200	191	191	178	181	171	187	194	204	211	219	228	223	239	246	229	243	235	218	205	179	178	151
10	149	153	146	135	133	131	148	163	175	170	191	193	195	186	194	198	202	195	200	191	179	177	165
11	152	149	145	141	139	155	164	167	179	188	200	206	223	241	230	245	236	243	236	224	218	208	188
12	184	170	156	161	175	165	179	191	195	200	221	233	245	259	263	269	259	250	251	230	218	214	204
13	219	201	199	189	200	206	205	206	209	212	219	230	235	233	223	224	224	224	222	220	212	205	197
14	170	173	181	187	187	192	203	203	215	222	238	247	265	271	257	257	252	215	234	221	220	216	206
15	194	184	188	185	182	198	210	217	232	236	243	247	244	232	228	225	232	232	231	222	215	209	219
16	205	199	196	191	189	188	194	204	215	219	232	243	249	244	186	193	195	202	202	205	198	195	189
17	187	184	181	181	177	181	190	197	215	219	227	235	249	258	271	272	268	271	263	244	219	219	223
18	204	195	183	186	174	181	194	205	215	219	231	234	252	263	275	282	279	271	268	251	234	237	233
19	224	213	206	205	212	209	211	214	210	222	229	225	224	218	216	221	193	205	205	181	170	167	162
20	146	153	151	147	146	141	145	148	154	160	167	171	179	188	190	196	198	200	199	202	201	198	199
21	183	173	166	159	158	157	167	176	192	202	212	221	231	245	247	249	253	249	241	219	174	167	199
22	138	146	139	129	123	129	158	176	190	205	216	234	251	258	263	263	260	260	253	229	205	195	204
23	196	188	187	176	174	171	175	198	207	216	218	228	222	238	253	234	228	236	222	212	196	197	183
24	178	175	175	169	164	170	188	198	209	218	235	242	257	264	271	272	269	264	258	232	215	214	214
25	219	215	207	205	188	197	202	209	213	221	236	238	236	229	229	258	252	222	223	218	193	200	200
26	206	200	192	186	185	188	188	195	198	207	213	232	241	236	250	253	252	247	238	220	200	192	177
27	186	189	176	167	167	165	173	181	192	202	213	223	219	230	229	233	225	224	224	209	176	172	167
28	167	160	154	137	145	134	157	182	194	205	204	216	228	227	241	239	236	235	229	198	184	174	174
29	174	153	136	151	128	146	157	184	208	218	235	239	244	251	249	260	255	249	254	249	243	238	229
30	202	191	186	191	192	190	198	200	201	204	207	213	221	221	212	219	223	218	210	205	203	201	200
31	193	194	194	182	182	186	186	188	193	195	174	173	190	190	200	210	200	195	193	187	183	182	178

Unités / Units: 0.1 °C M = Manquant /Missing

Lire / Read -123 = -12.3 °C -1 = -0.1 °C 0 = 0.0 °C 12 = +1.2 °C 123 = +12.3 °C

Heure normale locale: Est

Local standard time: Eastern

Vents horaires (km/h)
Hourly winds (km/h)

Montreal - Dorval (AUTO) Type B

Juillet 1996
July 1996

Heure normale locale: Est
Local standard time : Eastern

DATE	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Raisie max Peak Gust	heure time	jour day
1	S	SSW	SW	SW	SW	WSW	WSW	SW	SW	SSW	SW	SW	SW	SSW	W	WSW	WSW	WSW	SW	SW	SW	WSW	WSW	WSW	WSW		
	15	19	19	17	17	11	13	15	13	17	20	24	24	24	30	28	24	26	22	22	22	20	22	13	39	15	1
2	WSW	WSW	WSW	SSW	SSW	WSW	W	WSW	SW	SSW	SSW	SSW	SW	SSW	SSW	SW	SW	SW	WSW	WSW	ENE	E	ESE	SE			
	15	13	7	13	9	7	9	15	11	11	13	17	15	17	19	17	15	11	11	9	7	4	6	9			
3	ESE	SE	NE	N	NE	NE	NE	NE	NE	NNE	N	N	NE	N	N	NNE	NNE	NE	NNE	NNE	NNE	NNE	NE	NNE	NNE		
	11	6	7	6	4	11	9	11	13	11	11	15	11	15	19	22	26	19	24	28	24	20	20	19	37	18	3
4	NNE	N	NNE	N	NNE	N	NNE	NNE	NNE	N	N	N	N	N	N	NNW	NW	NW	NW	WNW	WNW	WNW	WNW	WNW	NNE		
	28	22	26	24	22	24	24	28	30	20	20	26	22	19	22	24	19	17	17	15	11	15	11	11	41	2	4
5	WNW	WNW	W	WNW	WNW	WNW	WNW	W	WNW	WNW	W	WNW	W	W	W	WSW	W	W	W	WSW	SW	SW	SW	SW	SW		
	15	11	13	13	17	15	15	17	15	17	22	26	20	24	20	26	30	19	15	17	17	22	19	24	46	1	5
6	SW	SW	SW	SW	SW	SW	WSW	WSW	WSW	W	WNW	W	WNW	WNW	NW	WNW	WNW	WNW	WNW	W	WSW	WSW	WSW	WSW	W		
	19	30	22	24	26	17	26	26	24	33	31	33	24	28	20	19	20	19	19	11	11	13	11	7	52	10	6
7	SW	WSW	SW	SW	WSW	SW	WSW	SSW	SW	SSW	S	SSE	SSE	SE	S	SSE	SE	SE	ESE	ESE	E	ESE	ESE	SSE			
	6	11	9	9	9	7	6	6	13	6	9	9	6	11	11	15	15	13	11	13	7	15	9	7			
8	SSW	SW	W	N	C	SSW	SSW	WSW	W	WSW	WSW	SW	SSW	WSW	SW	WSW	W	WSW	W	W	C	SW	S	SW	SW		
	6	9	6	4	0	4	13	13	13	15	22	24	22	28	30	24	24	19	20	9	0	7	7	9	41	14	8
9	SW	W	SW	SW	SW	WSW	SSW	SW	WSW	SW	SW	SW	SW	SW	SW	W	W	W	W	WNW	WNW	WNW	W	W	SW		
	11	13	13	6	11	13	11	15	26	22	26	31	24	30	26	19	17	28	22	17	11	13	11	11	39	13	9
10	W	WNW	W	WSW	SW	WSW	W	W	W	WSW	WSW	M	WSW	W	W	W	W	W	W	WSW	WSW	WSW	WSW	W	W		
	11	6	7	11	9	13	13	15	22	20	28	M	26	28	28	30	35	22	26	22	19	20	17	15	41	15	10
11	WSW	WSW	WSW	WSW	WSW	SW	SW	SW	SW	SW	SW	SW	SW	WSW	SW	SW	SW	SW	SW	WSW	WSW	WSW	WSW	WSW	SW		
	15	17	13	17	17	19	13	20	19	22	26	26	26	22	30	22	28	22	28	28	24	17	11	19	46	17	11
12	SW	WSW	WSW	WSW	SW	SW	SW	SW	SW	S	S	SW	S	SSW	WSW	SSE	SE	SE	ESE	SSE	SE	SSE	SSE	C			
	13	13	9	13	11	7	11	15	13	7	9	9	11	9	9	13	20	11	7	7	7	9	4	0			
13	E	SSE	M	NNW	NE	NE	SE	SE	SE	SE	SE	SE	SSE	SE	SE	ESE	ENE	E	E	NNE	NNE	NNE	N	N			
	6	7	M	4	7	9	11	17	17	13	6	15	15	15	19	17	11	9	9	13	17	15	9	6			
14	NW	WNW	WNW	W	WSW	WSW	WSW	S	S	SW	S	SSE	SE	SE	SE	SE	SE	E	ESE	E	ESE	E	SE	SE			
	7	4	7	6	4	9	7	9	15	7	7	4	13	17	19	17	11	15	11	9	11	7	11	13			
15	ESE	SSE	SE	SE	ESE	E	ESE	ESE	ESE	E	E	E	ESE	ESE	SE	SE	SSE	SE	SSE	SW	WSW	WSW	SW	WSW	WSW		
	7	7	9	7	4	6	7	11	13	13	9	13	17	15	20	20	13	15	17	24	22	24	20	28	39	1	15
16	SW	SW	SW	SW	SW	SW	SW	SW	WSW	SW	SSW	SW	SW	SW	W	SSW	SSW	SW	SW	SW	WSW	SW	WSW	WSW	WSW		
	30	22	22	22	22	24	22	22	24	15	22	26	26	15	20	19	19	26	11	20	17	22	20	20	63	14	16
17	WSW	WSW	WSW	WSW	WSW	SW	WSW	WSW	W	W	W	W	WSW	WSW	WSW	W	W	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW		
	22	20	19	19	17	15	20	19	22	24	26	19	22	24	24	26	24	22	22	15	11	11	19	13	35	15	17
18	W	W	WSW	SSW	SW	SW	SW	SW	SW	W	SW	S	WSW	SSW	SSW	SW	SSW	SSW	SSW	S	SSE	SE	SE	SE			
	13	13	6	7	7	9	9	13	13	13	7	7	11	15	15	13	13	15	11	9	7	6	9	11			
19	SE	SE	SE	C	SE	SE	SE	SE	SE	SE	SSE	SSW	S	SW	SSW	SW	N	NNW	NW	NNW	NW	WNW	WNW	WNW	NNW		
	11	11	7	0	7	7	7	15	13	20	20	11	7	13	11	13	28	33	39	31	24	17	22	26	59	16	19
20	WNW	WNW	WNW	WNW	WNW	W	W	W	W	WNW	WNW	WNW	WNW	NW	NW	NW	NW	NW	WNW	WNW	WNW	WNW	WNW	NW	WNW		
	17	19	26	26	24	30	26	28	30	41	31	35	33	30	30	35	31	28	24	28	20	20	20	26	59	10	20
21	NW	WNW	WNW	W	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	W	WNW	W	W	WNW	W	W	W	NNE	NW	W		
	26	19	22	20	22	24	26	24	19	17	24	19	22	22	22	19	26	20	13	15	13	11	6	4	39	15	21
22	SW	S	WSW	WSW	WSW	SW	WSW	WSW	S	S	S	S	SSW	SSW	SSW	S	SSW	SSW	SW	SW	SSE	SSE	SSE	WSW			
	6	4	6	7	9	9	6	7	7	7	9	13	11	13	17	19	19	15	11	11	9	9	7	9			
23	SSE	S	SSE	S	SSE	SSE	S	SSE	SW	SSW	SW	SSW	SSW	WSW	SSW	SE	SE	SSE	S	SSE	NW	SE	SSE	SE			
	6	6	6	4	6	4	4	4	9	11	9	7	9	7	9	19	9	19	17	24	13	7	6	9			
24	SSE	SSE	S	S	SSE	SSE	SW	SSW	SSW	SSW	SSW	SW	SSW	SSW	S	S	SSW	SSE	SSE	SSE	SSE	SSE	SE	SSE			
	7	7	6	7	7	9	7	9	11	13	9	13	13	9	7	7	9	15	13	13	13	15	15	13			
25	SE	S	ESE	SE	SE	ESE	ESE	SE	SSE	S	S	SW	SW	SE	ESE	SW	SW	WNW	WNW	SSW	WSW	SE	SSE	S	S		
	19	7	6	9	9	9	13	9	15	15	13	9	6	15	7	13	19	28	7	4	4	7	9	6	41	13	25
26	SW	WSW	SW	WSW	SW	WSW	WSW	SW	WSW	WSW	SW	WSW	W	W	W	W	W	W	W	W	WSW	W	WSW	W	WNW		
	9	9	7	7	4	6	7	15	17	17	15	19	15	20	22	24	24	22	11	13	13	11	9	11	33	16	26
27	SW	SW	SW	WSW	WSW	WSW	WSW	W	WNW	WNW	W	W	W	W	W	WNW	NW	WNW	NW	NW	NW	NW	NW	NNW	W		
	6	9	13	15	15	9	7	11	15	9	13	26	26	26	26	20	24	15	19	15	9	9	9	9	37	13	27
28	N	NNW	NNW	C	WSW	W	W	W	NNW	WNW	SW	WNW	W	WNW	WSW	WSW	SW	WSW	WSW	WSW	WSW	WSW	W	W			
	4	4	4	0	4	9	4	6	7	6	15	11	15	13	17	6	13	7	9	11	7	7	7	4			
29	WSW	S	N	C	C	ESE	NNE	NE	E	ESE	E	ESE	E	E	SSE	ESE	SE	SE	ESE	ENE	NE	NE	NE	ESE			
	6	11	4	0	0	4	9	7	7	6	11	20	15	13	19	15	17	15	11	9	9	9	7	15			
30	S	SSE	SSE	SSE	SE	SE	SSE	SE	SE	SE	SE	SE	SE	SE	SE	ESE	SSE	SSE	SE	SE	SE	SE	SE	SE	SE		
	15	9	13	15	15	9	19	19	22	20	22	19	15	17	13	19	19	19	15	17	17	19	17	19	31	8	30
31	SE	SE	SE	SE	ESE	E	ESE	SE	ESE	SE	SSE	SE	SE	SE	SE	SE	SE	ESE	ESE	SE	SE	ESE	ESE	ESE	SE		
	19	15	17	15	9	7	15	19	20	17	22	17	17	11	19	20	26	19	20	20	19	19	13	15	37	14	31

Avis/Note C= Calme /Calm M= Manquant /Missing

Points de rosée horaires — Montreal - Dorval (AUTO) Type B — Juillet 1996
Hourly dew points — July 1996

DATE	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	189	184	168	163	158	157	161	165	171	173	172	174	173	176	159	149	149	140	131	138	136	138	146	149
2	147	146	144	150	157	154	153	155	163	165	171	173	178	162	168	159	159	150	167	162	170	158	165	170
3	164	171	172	174	170	166	169	172	175	180	180	182	180	174	181	175	166	161	160	155	160	165	162	162
4	158	156	162	158	161	158	158	160	160	165	168	166	167	167	169	165	167	167	163	161	158	153	151	150
5	148	148	145	138	130	125	130	134	136	136	130	110	137	135	148	144	135	118	116	120	132	144	141	124
6	140	134	141	138	138	138	141	149	154	128	118	121	117	113	121	117	115	111	111	112	119	122	121	118
7	119	120	124	123	117	124	146	148	151	141	151	147	131	146	148	139	138	138	155	150	150	148	164	171
8	173	176	180	169	171	174	181	182	185	180	174	164	162	162	157	163	153	153	144	152	143	155	169	164
9	158	147	146	150	150	152	152	149	149	151	150	153	146	148	158	148	144	131	129	133	128	131	124	125
10	128	133	125	119	122	121	131	129	128	121	129	118	118	116	117	121	126	124	120	125	119	119	115	124
11	134	134	128	121	114	114	131	128	128	132	138	130	143	141	142	148	139	150	144	134	123	122	114	129
12	111	109	113	113	112	123	138	140	141	151	147	136	140	148	143	143	131	119	141	152	154	158	154	155
13	152	157	158	164	163	159	162	167	174	177	180	188	188	190	186	187	181	180	180	178	178	180	181	178
14	167	171	180	181	181	185	191	189	192	190	189	195	196	194	189	182	183	201	204	205	200	200	195	192
15	189	180	183	179	177	186	192	201	208	210	210	213	225	226	224	225	231	231	230	219	211	203	203	192
16	193	190	186	181	178	181	183	188	186	186	191	188	188	189	169	171	174	167	164	169	154	163	168	164
17	162	160	157	156	156	156	159	164	173	171	173	176	175	176	173	168	172	173	165	164	167	174	175	176
18	176	176	171	173	168	175	181	187	184	182	193	199	196	195	205	208	197	187	188	183	195	196	193	187
19	185	186	190	189	183	186	185	187	196	204	206	213	219	212	211	217	153	157	151	119	112	119	112	111
20	114	117	109	98	97	98	98	100	103	100	96	93	94	89	88	89	88	89	97	95	96	99	87	83
21	85	84	86	89	89	90	98	102	107	114	113	115	125	127	118	109	104	98	107	105	122	115	111	110
22	109	111	121	112	113	125	141	141	150	152	164	176	173	165	138	122	138	142	137	143	146	145	140	151
23	154	149	150	153	155	157	163	160	146	150	164	173	161	180	170	173	168	180	169	170	168	170	164	166
24	168	167	169	165	161	163	173	176	181	180	191	192	192	170	165	162	176	177	179	183	181	180	180	180
25	173	171	181	177	170	177	175	182	186	196	193	195	196	191	210	207	192	172	176	174	176	185	185	184
26	190	180	173	170	169	177	178	181	181	184	189	191	184	168	179	172	163	163	164	151	146	147	146	153
27	155	158	156	149	151	153	158	163	162	160	165	167	153	155	150	148	142	145	144	135	134	135	133	137
28	135	138	135	131	130	126	150	148	131	130	138	113	131	112	116	101	100	96	111	120	118	116	118	116
29	118	134	125	139	125	135	143	150	154	140	129	125	137	141	143	144	147	146	135	131	130	129	138	137
30	166	171	172	172	169	169	171	172	172	163	158	161	166	157	173	167	166	160	157	149	150	153	153	152
31	153	152	156	166	168	170	165	166	165	165	164	169	177	177	178	179	170	169	167	161	162	163	165	164

Unités / Units: 0.1 °C — M = Manquant / Missing

Humidités relatives horaires — Montreal - Dorval (AUTO) Type B — Juillet 1996
Hourly relative humidities — July 1996

DATE	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	94	85	78	77	77	81	77	75	73	71	66	66	61	59	49	46	46	44	51	58	60	64	61	66
2	68	76	82	82	89	86	76	70	69	68	66	63	60	51	56	50	52	51	61	62	66	66	72	79
3	71	83	78	88	88	84	86	88	88	86	86	85	79	73	70	69	67	68	72	71	76	81	81	84
4	84	87	93	93	96	96	97	97	97	97	98	96	96	92	94	94	97	96	96	96	94	93	91	92
5	94	93	91	90	90	87	82	77	71	65	56	45	52	49	51	50	46	47	48	52	57	65	67	58
6	71	65	72	70	68	70	70	72	74	61	57	55	53	53	56	54	49	50	50	55	75	82	86	87
7	82	87	88	90	93	93	87	85	83	71	74	67	56	57	58	55	61	64	74	71	70	68	80	91
8	90	90	95	99	99	100	91	91	88	82	72	66	65	63	58	57	55	57	55	65	67	76	79	79
9	77	76	75	84	82	89	80	75	71	69	65	63	62	57	58	60	54	52	57	63	72	74	84	90
10	87	88	87	90	93	94	90	80	74	73	67	62	61	64	61	61	62	64	60	66	68	69	72	82
11	89	91	90	88	85	77	81	78	72	70	67	62	61	54	58	55	55	56	56	57	55	58	62	72
12	62	67	76	73	67	76	77	76	73	73	63	54	52	50	48	46	45	44	50	61	67	70	73	72
13	66	76	77	85	79	74	76	78	80	80	79	77	75	77	80	80	77	76	77	77	81	86	90	92
14	98	99	99	96	96	96	93	92	87	82	74	73	66	63	62	63	66	92	83	91	88	91	93	94
15	97	98	97	96	97	93	89	91	86	85	82	81	89	96	98	100	99	99	99	98	98	96	91	89
16	93	95	94	94	93	96	93	91	84	82	78	71	69	71	90	87	88	80	79	80	76	82	88	87
17	85	86	86	85	88	85	82	81	77	74	72	70	64	61	55	53	56	55	55	61	72	76	74	81
18	84	89	93	92	96	96	92	89	83	80	79	81	71	66	66	64	61	60	62	66	79	78	78	81
19	79	85	91	91	84	87	85	85	92	90	87	93	97	96	97	98	78	74	71	67	69	73	72	72
20	81	79	76	72	72	75	73	73	72	68	63	60	58	53	52	50	49	49	52	50	51	53	48	49
21	53	56	59	63	64	64	64	62	58	57	53	51	51	48	44	41	39	38	43	48	72	71	61	62
22	83	80	89	89	94	97	90	80	78	72	72	70	62	57	46	42	47	48	49	58	69	73	67	83
23	77	78	79	86	89	91	93	79	68	66	71	71	68	70	60	69	69	71	72	77	84	84	89	92
24	94	95	96	97	98	96	91	87	84	79	76	74	67	56	52	51	57	59	62	74	81	81	81	80
25	75	76	85	84	89	88	84	85	85	86	77	77	78	79	89	73	69	73	75	76	90	91	91	95
26	91	88	89	90	90	93	94	92	90	87	86	78	71	66	65	61	58	60	63	65	71	75	82	79
27	82	82	88	89	90	93	91	89	83	77	74	71	66	63	61	59	59	61	61	63	76	79	80	82
28	81	87	88	96	91	95	96	81	67	62	66	52	54	48	46	42	42	41	47	61	65	69	70	68
29	70	88	93	93	98	93	91	81	71	61	51	49	51	50	52	49	51	53	48	48	49	50	57	59
30	80	88	92	89	87	88	84	84	83	77	74	72	71	67	78	72	70	70	72	70	72	74	74	76
31	78	77	79	90	92	90	88	87	84	83	94	97	92	92	87	82	83	85	85	85	88	89	92	92

Unités: pourcent (%) /Units: percent (%)

Environnement Canada Direction de l'environnement atmosphérique

Environment Canada Atmospheric Environment Branch

SOMMAIRE MÉTÉOROLOGIQUE MENSUEL
MONTHLY METEOROLOGICAL SUMMARY

Montreal - Dorval (AUTO)

Août 1996

August 1996

LAT 45° 28N LONG 73° 45W ALTITUDE 36 METRES (NMM) ÉLÉVATION 36 METRES (ASL) HEURE NORMALE UTILISÉE STANDARD TIME USED DE L'EST Eastern

DATE	TEMPERATURE MAXIMALE MAXIMUM °C	TEMPERATURE MINIMALE MINIMUM °C	TEMPERATURE MOYENNE MEAN °C	DEGRÉS-JOURS DE CHAUFFE HEATING Base 18 °C	DEGRÉS-JOURS DE CROISSANCE GROWING Base 5 °C	DEGRÉS-JOURS DE REFROIDISSEMENT COOLING Base 18 °C	HUMIDITÉ REL. REL. HUMIDITY MAXIMALE MAXIMUM %	HUMIDITÉ REL. REL. HUMIDITY MINIMALE MINIMUM %	GRADE TRANSMISSIBILITÉ	PRÉCIPITATIONS PRECIPITATION PLUIE (PRINTEMPS) RAINFALL mm	PRÉCIPITATIONS PRECIPITATION NEIGE (PRINTEMPS) SNOWFALL cm	PRÉCIPITATIONS PRECIPITATION PRÉCIP TOTAL PRECIP mm	HAUTEUR DU SOL ENCOUVERT SNOW ON GROUND cm	VENTS WINDS VITESSE MOYENNE AVERAGE SPEED km/h	VENTS WINDS DIRECTION DOMINANTE PREVAILING DIRECTION	VENTS WINDS VITESSE MOYENNE MAX DUR 2 HRS & DIRECTION SPEED & DIRECTION km/h		INSOLATION EFFECTIVE BRIGHT SUNSHINE HEURES HOURS
1	21.2	15.4	18.3		13.3	0.3	100	83	1	5.0		5.0		5.3	NE	NNE*	9	0.9
2	23.6	14.8	19.2		14.2	1.2	100	69						9.9	SSW*	WSW*	17	7.8
3	27.2	16.2	21.7		16.7	3.7	99	50						7.5	SSW	SSW*	13	12.5
4	27.7	15.1	21.4		16.4	3.4	98	57						8.4	SSW	SSW*	15	12.9
5	29.4	18.1	23.8		18.8	5.8	95	52						7.9	SW	SSW*	13	13.4
6	30.1	18.1	24.1		19.1	6.1	99	40						6.6	S	SSW	15	13.4
7	31.5	18.7	25.1		20.1	7.1	93	55						9.4	S	SSW*	15	9.2
8	30.0	21.2	25.6		20.6	7.6	94	69		0.5		0.5		16.5	SW	SW	31	1.6
9	27.9	16.2	22.1		17.1	4.1	98	50		0.5		0.5		14.3	W	SW*	20	9.0
10	22.3	11.8	17.1	0.9	12.1		93	47										8.0
11	21.9	8.2	15.1	2.9	10.1		92	42						7.8	SSW*	SW*	17	13.4
12	24.4	10.9	17.7	0.3	12.7		87	53						9.1	S*	S	20	7.6
13	25.5	15.5	20.5		15.5	2.5	94	65						15.2	SW	SW	24	7.4
14	25.3	14.7	20.0		15.0	2.0	84	48						10.5	N	SW	17	13.5
15	29.0	15.2	22.1		17.1	4.1	95	48	1	4.5		4.5		12.8	E*	SE	28	11.9
16	26.0	18.0	22.0		17.0	4.0	96	69		1.0		1.0		13.0	SW	WSW	24	4.2
17	25.8	16.0	20.9		15.9	2.9	98	51						9.9	WSW*	W	19	11.2
18	27.2	13.3	20.3		15.3	2.3	98	50						10.0	WSW	SW	17	7.5
19	25.0	11.3	18.2		[illegible]	0.2	95	45						6.5	SE	N	11	13.0
20	28.6	11.2	19.9		[illegible]	1.9	99	52		6.5		6.5		7.3	S*	SW	19	9.6
21	28.9	15.4	22.2		17.2	4.2	99	51		0.5		0.5		12.3	W	W	22	9.5
22	27.6	12.1	19.9		14.9	1.9	100	54						9.5	SSW	SSW	17	12.0
23	26.1	15.1	20.6		15.6	2.6	98	80		4.0		4.0		10.3	WSW	WSW	19	2.5
24	26.6	13.8	20.2		15.2	2.2	99	36						10.4	W	W	26	11.7
25	29.3	16.4	22.9		17.9	4.9	90	43						26.0	SW	WSW	52	12.4
26	20.5	14.3	17.4	0.6	12.4		94	55		TR		TR		8.1	NE	N*	15	2.9
27	20.7	13.3	17.0	1.0	12.0		93	53		TR		TR		14.1	NE	NE*	20	6.4
28	25.1	11.7	18.4		13.4	0.4	89	56						9.6	NNE*	NNE	19	10.5
29	26.8	13.9	20.4		15.4	2.4	99	38						15.5	WSW	WNW	24	12.0
30	22.4	8.9	15.7	2.3	10.7		87	42						15.9	WSW	SW	28	10.9
31	27.0	15.6	21.3		16.3	3.3	82	49						18.0	WSW	SW*	26	10.6
	MOY. MEAN 26.1	MOY. MEAN 14.5	MOY. MEAN 20.4	TOTAL 8.0	TOTAL 476.1	TOTAL 81.1	MOY. MEAN 94	MOY. MEAN 53	TOTAL 2	TOTAL 22.5	TOTAL	TOTAL 22.5		MOY. MEAN 11.3	DOMINANTE PREVAILING SW	MAXIMALE MAXIMUM WSW	52	TOTAL 289.6
NORMALE NORMAL	24.6	14.1	19.4	25.2	446.0	68.2			6	100.3	0	100.3		11.0	SW			240.8

SOMMAIRE DE DEGRÉS-JOURS/DEGREE-DAY SUMMARY

AU-DESSOUS DE 18°C BELOW 18°C	ANNÉE EN COURS THIS YEAR	ANNÉE PRÉCÉDENTE PREVIOUS YEAR	NORMALE NORMAL	AU-DESSUS DE 5°C ABOVE 5°C	ANNÉE EN COURS THIS YEAR	ANNÉE PRÉCÉDENTE PREVIOUS YEAR	NORMALE NORMAL
TOTAL DU MOIS TOTAL FOR MONTH	8.0	12.4	25.2	TOTAL DU MOIS TOTAL FOR MONTH	476.1	471.1	446.0
ACCUMULÉS DEPUIS LE 1ER JUILLET ACCUMULATED SINCE JULY 1	10.8	12.4	34.3	ACCUMULÉS DEPUIS LE 1ER AVRIL ACCUMULATED SINCE APRIL 1	1629.0	1754.6	1640.7

JOURS AVEC PRÉCIPITATIONS TOTALES DAYS WITH TOTAL PRECIPITATION (TOTP)

0.2 OU PLUS OR MORE	1.0 OU PLUS OR MORE	5.0 OU PLUS OR MORE	10.0 OU PLUS OR MORE	25.0 OU PLUS OR MORE
8	5	4		

JOURS AVEC CHUTES DE NEIGE DAYS WITH SNOWFALL (SF)

0.2 OU PLUS OR MORE	1.0 OU PLUS OR MORE	5.0 OU PLUS OR MORE	10.0 OU PLUS OR MORE	25.0 OU PLUS OR MORE

Données non contrôlées/Data not validated

Les précipitations ont un seuil mesurable de 1,0 mm

Measurable threshold of precipitation is 1,0 mm

1. Journée climatologique/Climatological Day
2. Normale/Normal 1961-1990
3. TR=Trace
4. M=Manquant/Missing E=Estimé/Estimated
5. Pas de valeur/No value=Pas d'événement/No occurence
6. Calculé/Calculated

Canada

Température horaire
Hourly temperature

Montreal - Dorval (AUTO)

Août 1996
August 1996

DATE	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	177	177	178	179	177	176	177	186	195	199	204	199	188	190	203	208	210	198	195	186	179	180	170	157
2	169	169	165	163	155	150	167	167	170	177	187	197	198	216	223	230	230	233	223	204	201	202	196	178
3	179	183	169	177	174	174	182	198	208	223	237	246	250	255	258	264	264	261	252	236	202	207	207	174
4	198	172	183	152	165	163	187	200	215	236	244	257	267	272	275	274	274	269	263	250	238	225	209	208
5	198	202	190	189	186	182	202	215	234	241	255	265	279	287	289	289	290	281	278	263	255	238	236	229
6	221	204	195	184	193	205	214	229	236	248	267	278	289	292	293	297	300	293	282	258	246	236	242	240
7	229	214	201	214	195	195	206	229	240	265	270	290	297	304	310	308	302	293	293	272	254	251	258	254
8	252	240	232	225	217	219	223	242	254	261	262	271	277	289	285	284	272	249	238	233	213	224	223	223
9	223	221	216	215	216	210	214	219	231	228	235	236	248	250	268	278	261	264	252	225	212	202	182	168
10	164	168	164	150	146	142	161	171	172	177	185	197	209	194	200	207	222	205	209	182	167	149	135	139
11	137	120	104	96	87	100	105	132	153	167	181	191	200	215	210	209	210	211	201	182	168	160	150	148
12	130	128	125	145	138	132	131	163	176	192	201	209	221	228	236	240	241	239	232	217	216	219	203	191
13	194	204	200	199	194	194	197	199	204	216	231	239	234	240	244	243	243	238	236	216	195	187	178	170
14	175	155	160	163	158	150	157	174	188	201	213	224	232	236	240	239	248	239	231	216	200	184	184	169
15	163	173	175	173	166	162	166	183	203	222	234	249	262	273	280	287	281	275	265	256	248	239	202	199
16	198	204	190	198	191	194	199	205	214	217	215	238	236	212	209	237	244	237	225	205	194	187	187	188
17	189	188	182	183	185	183	184	194	209	212	229	231	231	245	247	254	251	245	233	205	187	182	185	178
18	165	172	183	170	167	179	178	183	193	204	205	214	231	234	248	251	267	252	244	240	232	221	209	199
19	193	133	136	139	139	116	138	166	191	208	223	231	227	236	237	243	244	244	229	214	176	177	174	149
20	160	170	167	161	134	152	139	158	180	213	227	239	263	267	274	282	275	269	260	233	241	246	235	214
21	207	213	212	212	214	212	216	222	232	239	247	249	263	277	282	268	283	275	256	216	204	192	193	189
22	174	165	152	154	145	124	141	177	195	211	223	244	254	262	265	273	272	272	259	252	240	222	228	225
23	220	212	210	202	199	206	213	219	220	224	236	240	254	250	258	251	215	227	233	223	210	202	193	180
24	180	152	156	152	142	138	149	168	191	213	228	244	252	262	256	254	256	248	228	196	181	179	195	197
25	191	191	191	168	171	182	185	197	217	239	255	268	282	276	286	284	272	265	255	246	239	230	219	209
26	210	197	191	183	174	163	170	180	186	191	184	190	192	196	199	196	174	180	177	175	177	169	167	168
27	162	154	167	163	156	147	149	157	166	186	193	200	199	198	192	195	197	205	198	188	180	175	169	150
28	144	133	127	132	122	119	128	138	150	181	201	225	239	236	250	247	243	237	225	198	181	168	165	156
29	156	153	156	152	156	155	154	163	181	199	232	226	239	251	255	263	251	243	226	198	191	182	162	154
30	149	145	133	131	116	95	105	141	156	166	180	189	199	211	214	219	217	208	198	192	189	187	186	177
31	170	166	172	164	160	160	163	164	185	198	210	222	240	254	259	265	257	250	235	219	201	210	184	176

Unités / Units: 0.1 °C M = Manquant /Missing

Lire / Read -123 = -12.3 °C -1 = -0.1 °C 0 = 0.0 °C 12 = +1.2 °C 123 = +12.3 °C

Heure normale locale: Est

Local standard time: Eastern

Vents horaires (km/h)
Hourly winds (km/h)

Montreal - Dorval (AUTO)

Aout 1996
August 1996

Heure normale locale: Est
Local standard time : Eastern

DATE	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Rafale max Peak Gust		
1	E	NE	ENE	ENE	NE	E	E	E	C	NE	NE	NNE	SE	NW	NE	N	NNE	ESE	SSE	N	N	NNE	NE	SSE			
	6	6	6	4	7	7	4	6	0	6	7	4	4	6	7	6	9	9	4	6	4	4	4	4			
2	S	S	SSW	S	C	WSW	WSW	WSW	W	SW	W	WSW	SW	W	W	W	SSW	SW	W	WNW	SSW	SSW	SSW	WSW			
	4	6	6	6	0	7	9	11	6	11	9	17	11	17	11	11	15	15	15	9	9	13	9	4			
3	SSW	S	S	SSW	SW	SSW	WSW	SSW	SW	SSW	SSW	SSW	SSW	S	SSW	SW	SSE	SSW	SSW	SSW	NW	S	S	W			
	6	11	7	7	7	6	9	6	6	9	11	13	13	9	11	6	7	11	9	6	4	6	6	6			
4	C	W	C	SW	SW	SSW	SSW	SSW	SW	S	SSW	S	SSW	SSW	S	S	SSW	SSW	SW	SW	SW	SSW	SW	SSW			
	0	4	0	6	4	4	9	9	6	7	9	11	15	15	13	15	11	11	11	11	7	6	4	7			
5	S	SSE	SW	SW	SW	SW	SW	SW	SSW	SSW	SSW	SW	SSW	SW	SSW	S	SSW	SW	SW	SW	SW	S	S	SSE			
	7	4	4	7	7	7	7	7	4	11	11	11	9	11	13	13	11	11	7	9	9	4	6	4			
6	S	C	SW	SW	W	C	S	S	SW	S	S	S	SW	SSW	SSW	WSW	SSW	SSW	SSW	S	C	SE	SE	SSE			
	6	0	4	6	4	0	4	6	7	7	6	9	9	11	15	11	9	9	7	9	0	6	6	6			
7	SSE	SE	C	SE	SE	SE	SSE	SE	SSE	S	SSE	S	WSW	SSW	SW	SW	SSW	SW	SW	S	SSE	SSE	S	S			
	4	4	0	4	7	7	4	4	4	7	7	11	13	15	15	15	15	11	7	9	7	11	13	15			
8	S	S	SSE	SE	SE	SSE	SSE	S	S	SW	SW	SW	SW	SW	SSW	SW	SW	SW	W	WSW	WSW	WSW	WSW	SW	WSW		
	13	11	6	11	11	9	11	13	15	19	19	17	15	24	24	31	24	26	19	11	11	15	17	17	41	16	8
9	WSW	WSW	WSW	SW	W	WSW	W	WSW	SW	WSW	W	WSW	SSW	SW	SW	W	W	W	W	W	WNW	NNW	NW	NW	SW		
	17	15	15	15	11	9	11	13	15	17	13	17	19	20	19	19	20	20	19	13	13	15	7	9	31	13	9
10	NW	WNW	NW	NW	W	NW	NW	NNW	NW	NW	NNE	NNW	W	WNW	WNW	WNW	WNW	WSW	WNW	WNW	WNW	NW	NNW	N			
	7	7	11	9	4	7	6	9	9	9	4	11	9	13	4	13	13	19	15	15	15	13	13	9			
11	N	N	NNW	NW	NW	N	NW	C	C	SSW	S	SSW	SW	WSW	SW	S	S	SSW	SSW	SW	SSE	S	SSE	SSE			
	15	7	9	6	4	7	6	0	0	6	4	7	15	15	17	17	15	11	9	6	6	7	9	7			
12	C	SE	C	ESE	ESE	ESE	C	C	ESE	SW	WSW	S	S	SE	SSE	SSE	SSE	SSE	S	SSE	SSE	S	S	SSE			
	0	6	0	7	6	6	0	0	4	4	7	6	7	11	13	11	13	17	13	13	13	20	11	9			
13	S	S	S	SW	SSW	SSW	SSW	SSW	SSW	SW	SW	SW	W	W	SW	SW	SW	SW	WSW	W	WNW	WNW	NW	NW	SW		
	13	15	17	22	13	17	17	20	13	22	24	22	15	20	17	20	22	19	13	11	11	7	6	4	33	10	13
14	N	NNW	N	NNE	NNE	N	N	N	N	NNE	NNW	NNW	NW	SW	SW	S	WNW	SSW	SW	SW	SSW	C	SE	SE			
	4	9	6	6	7	13	15	15	15	11	9	11	13	17	15	15	11	15	15	9	4	0	7	6			
15	SE	SE	E	E	E	E	ESE	ENE	ENE	E	E	E	E	SE	SE	SE	SE	SE	SE	SE	SE	SSW	NNW	ENE	ESE		
	6	11	6	7	7	6	9	7	9	11	13	11	13	17	19	20	28	22	15	20	20	15	15	6	35	16	15
16	SSE	NNE	C	SSE	SSE	SSE	S	SSW	SW	SSW	SW	SSW	S	WNW	WSW	WSW	SW	SW	SSW	WSW	WSW	W	WSW	W			
	4	6	0	13	9	11	13	11	20	15	20	15	13	22	20	24	22	19	13	9	9	7	7	6			
17	SW	SW	WSW	NNW	NNW	NNW	NNW	NNW	NNE	NNW	NNW	SW	WSW	WNW	W	W	W	W	WSW	WSW	WSW	WSW	SW	WSW			
	7	7	6	4	6	6	6	7	7	4	4	11	13	13	17	17	19	17	15	13	7	9	9	9			
18	W	SW	SW	WSW	WSW	SW	WSW	WSW	W	WSW	W	W	WSW	SW	SW	SSW	WNW	NNE	NNE	NE	NE	NE	NE	E			
	7	11	11	7	9	17	13	13	11	11	7	6	6	6	11	13	13	15	9	9	11	13	15	7			
19	E	C	NNW	NNW	N	NNE	N	N	N	C	NE	SE	SSW	S	S	SSW	WSW	WNW	SSE	C	SSE	SE	SE	SE			
	6	0	6	6	9	6	6	11	7	0	7	4	9	7	9	6	6	7	4	0	9	9	7	4			
20	SE	ESE	E	ESE	C	NE	N	N	C	C	ESE	S	SE	SSE	S	SSE	SSE	SE	WSW	C	E	ENE	SW	SSW	WSW		
	7	9	7	6	0	4	7	7	0	0	6	11	11	7	7	11	13	13	4	0	4	4	19	13	35	22	20
21	S	SSW	WSW	W	W	W	W	W	W	WNW	W	NW	W	W	NW	WNW	W	WNW	NW	NW	NW	NW	NNW	N			
	11	11	13	11	13	11	7	11	15	15	9	17	9	19	11	17	22	19	13	11	11	11	7	6			
22	N	NNW	NNW	N	N	NW	NNW	N	C	S	WSW	SSW	SW	S	S	SSW	SW	SW	SW	SSW	S	S	SSW	SSW			
	9	7	7	4	4	9	4	7	0	4	9	9	13	11	13	11	9	13	15	11	13	11	13	17			
23	SSW	W	S	WSW	WSW	SW	SW	SW	WSW	WSW	WSW	W	SSW	SW	SSW	WSW	WSW	WSW	WSW	NNW	NNW	NNW	N	NNW	WNW		
	13	7	13	7	7	7	15	17	13	11	15	11	15	17	17	19	11	11	6	6	4	4	4	6	41	16	23
24	N	NW	NW	NW	NW	W	C	WNW	N	N	NNW	N	WNW	W	W	W	W	W	W	WSW	WSW	SW	S	SSW	W		
	4	6	4	4	7	6	0	6	7	7	4	13	9	11	22	11	26	15	13	9	7	7	13	15	31	14	24
25	SSW	SSW	SW	WSW	SW	SW	SW	SW	SSW	SW	SW	SW	SW	SW	SW	WSW	SW	SW	SW	SW	WSW	WNW	WNW	NW	WSW		
	15	19	22	9	9	20	20	24	20	28	26	35	31	46	41	52	43	43	39	28	24	17	13	9	69	13	25
26	NNE	N	N	N	NNE	NNE	NNE	NE	NE	NE	NE	NE	E	NE	NNE	NE	N	NE	ESE	NE	E	C	SSE	SE			
	15	11	13	15	9	11	7	15	15	15	13	13	9	6	[illegible]	4	9	6	7	6	6	0	4	4			
27	C	C	C	NNE	NNE	NNE	NNE	NE	NE	NNE	NE	NE	NE	NE	NNE	NE	NE	NE	NE	NE	NE	NE	NE	NNE			
	0	0	0	4	9	13	17	19	15	19	19	17	15	20	19	17	20	13	15	9	15	15	15	11			
28	NNE	NNE	NNE	NNE	N	NNE	NNE	NNE	NNE	NE	ENE	S	C	NW	W	SW	SW	SSW	SSW	SW	WSW	WSW	WSW	WSW			
	9	13	11	17	17	13	19	11	13	7	6	6	0	9	9	7	11	9	9	7	7	7	9	9			
29	WSW	WSW	WSW	SW	SW	SW	SW	WSW	WSW	WSW	W	W	W	WSW	WSW	NW	WNW	WNW	NW	NNW	NNW	N	N	N	WNW		
	9	9	9	7	7	15	19	17	17	19	19	22	15	19	19	20	20	24	20	15	17	17	7	9	37	15	29
30	N	N	N	N	NNW	NNW	NNW	NW	N	NNW	SSW	SSW	SSW	SSW	SW	SW	WSW	WSW	SW	WSW	WSW	WSW	WSW	SW	WSW		
	9	11	9	7	4	7	6	6	11	7	15	13	15	17	22	22	24	24	28	22	20	20	24	22	39	19	30
31	SW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	SSW	SW	SW	WSW	W	WSW	SW	SW	SW	SW	WSW	SW	SW	WSW	SW		
	19	17	19	19	19	19	20	20	22	24	20	22	26	26	22	22	20	17	15	15	13	15	11	13	35	12	31

Avis/Note C= Calme /Calm M= Manquant /Missing

Points de rosée horaires — Montreal - Dorval (AUTO) — Août 1996
Hourly dew points — August 1996

DATE	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	163	163	164	164	160	162	164	169	172	172	174	169	182	184	192	183	180	177	181	181	175	176	164	157
2	169	169	165	163	155	150	164	165	167	165	167	169	165	166	169	174	174	172	166	165	171	176	176	168
3	171	178	165	174	172	172	176	183	183	187	193	196	189	181	179	153	154	148	145	154	158	163	169	160
4	180	163	167	148	158	160	180	185	191	202	201	202	200	181	184	184	181	180	175	172	187	182	191	192
5	183	183	180	180	176	173	191	195	200	205	209	202	197	183	189	187	180	175	184	185	192	198	192	189
6	181	181	181	182	185	182	196	202	202	204	202	210	210	184	190	176	155	144	160	168	165	167	185	188
7	190	185	183	183	182	182	195	198	192	195	209	217	220	203	209	217	211	214	224	216	226	227	226	211
8	196	195	197	199	194	195	197	203	209	217	218	222	227	227	229	222	221	214	216	216	196	203	206	212
9	210	208	210	212	211	206	210	208	209	207	206	198	201	197	179	173	155	151	148	151	155	144	142	137
10	133	139	139	134	134	128	146	138	138	137	137	130	117	123	123	113	114	113	91	81	79	79	85	84
11	73	71	68	67	69	73	93	80	69	72	72	73	78	84	80	79	81	83	69	70	79	83	101	101
12	94	95	94	101	101	101	110	120	130	131	120	128	122	140	149	148	154	156	170	170	172	152	150	151
13	150	154	156	160	158	157	156	153	158	161	169	172	176	182	180	175	173	173	174	174	168	167	167	160
14	156	140	133	125	122	119	122	122	113	112	113	117	116	122	132	129	129	131	132	138	137	137	150	137
15	130	134	133	136	143	138	130	128	130	123	123	146	155	162	168	166	166	169	176	177	180	190	181	181
16	190	190	182	177	177	179	180	180	178	182	179	194	191	172	187	195	183	178	196	180	178	177	178	181
17	178	181	179	180	174	173	173	176	164	163	166	169	165	156	152	149	144	140	138	140	141	143	144	142
18	140	155	173	165	164	171	169	172	174	176	176	168	174	169	170	164	155	157	150	157	156	146	132	136
19	115	110	124	126	121	109	117	117	118	118	117	107	118	117	114	116	116	119	114	107	124	119	116	115
20	113	111	118	127	119	134	125	136	136	147	150	147	156	161	176	190	198	197	198	186	177	182	195	202
21	205	208	209	211	211	209	212	211	214	214	205	198	210	206	193	183	172	172	164	158	159	155	154	154
22	153	152	145	144	135	124	135	138	139	144	153	164	160	163	167	172	170	174	179	188	194	192	180	178
23	177	185	191	196	191	190	189	194	202	207	213	211	216	221	220	215	206	206	213	209	203	188	190	176
24	162	148	150	146	141	137	145	153	144	138	135	116	91	113	94	107	112	122	113	114	115	125	159	145
25	150	146	152	150	152	165	161	160	161	164	167	162	164	151	152	147	156	156	157	161	158	168	159	150
26	140	132	133	128	130	116	128	102	98	100	92	102	105	111	114	112	139	134	138	137	138	140	149	151
27	149	145	148	147	144	135	111	112	111	115	100	109	105	105	120	113	108	106	105	108	106	104	105	108
28	114	109	100	102	104	101	103	109	117	130	137	148	156	153	156	154	159	155	153	152	153	148	144	133
29	131	134	140	151	150	148	141	143	140	148	148	139	147	153	156	108	105	105	104	107	97	93	92	90
30	86	84	84	81	75	75	84	95	82	86	88	90	98	105	102	92	81	90	102	101	109	109	124	128
31	138	131	129	130	130	129	128	133	135	137	143	160	159	153	145	149	152	147	139	144	137	144	148	144

Unités / Units: 0.1 °C — M = Manquant / Missing

Humidités relatives horaires — Montreal - Dorval (AUTO) — Août 1996
Hourly relative humidities — August 1996

DATE	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	92	92	92	91	90	92	92	90	87	84	83	83	96	96	93	86	83	88	92	97	98	98	96	100
2	100	100	100	100	100	100	98	99	98	93	88	84	81	73	72	71	71	69	70	78	83	85	88	94
3	95	97	97	98	99	99	96	91	86	80	76	74	69	64	62	51	51	50	52	60	76	76	79	91
4	89	94	90	97	96	98	96	91	86	81	77	72	67	58	58	58	57	58	58	62	73	77	89	91
5	91	89	94	95	94	94	93	88	81	80	76	68	61	53	55	54	52	53	57	62	68	78	76	78
6	78	87	92	99	95	87	89	85	81	77	68	67	62	52	54	48	42	40	48	58	61	65	71	73
7	79	84	89	83	92	92	93	83	75	65	69	65	63	55	55	58	58	63	66	72	85	87	83	77
8	71	76	81	85	87	86	85	79	76	77	77	75	74	69	72	69	74	81	88	90	90	88	90	94
9	92	92	96	98	97	98	98	93	87	88	84	79	75	72	58	53	52	50	53	63	70	69	77	82
10	82	83	85	90	93	91	91	81	81	77	74	65	56	64	61	55	50	56	47	52	56	63	72	69
11	65	72	79	82	88	83	92	71	57	53	49	46	45	43	43	43	43	44	42	48	56	60	72	73
12	79	80	81	75	78	81	87	76	74	68	60	60	53	58	58	56	58	60	68	75	76	66	72	78
13	76	73	76	78	80	79	77	75	75	71	68	66	70	70	68	66	65	67	68	77	84	88	93	94
14	89	91	84	78	79	82	80	72	62	57	53	51	48	49	51	50	48	51	54	61	67	74	81	81
15	81	78	76	79	86	86	79	70	63	53	50	53	52	51	51	48	50	52	58	62	66	74	88	89
16	95	92	95	88	92	91	89	86	80	81	80	76	76	78	87	77	69	70	84	86	90	94	95	96
17	93	96	98	98	93	94	93	89	75	74	68	68	66	58	56	52	51	52	55	66	75	78	77	79
18	85	90	94	97	98	95	94	93	89	84	83	75	70	67	62	59	50	56	56	60	62	62	61	67
19	61	86	92	92	89	95	87	73	63	56	51	46	50	47	46	45	45	46	48	50	72	69	69	80
20	74	68	73	80	91	89	91	87	75	66	62	56	52	52	55	57	63	65	69	75	67	68	78	93
21	99	97	98	99	98	98	98	93	90	86	78	73	72	65	59	60	51	53	57	70	75	79	78	80
22	87	92	96	94	94	100	96	78	70	66	65	61	56	54	55	54	54	55	61	68	75	83	74	75
23	77	85	89	96	95	91	86	86	90	90	87	84	80	84	80	80	95	88	89	92	96	92	98	98
24	89	97	96	96	99	99	97	91	74	62	56	45	36	39	36	40	41	45	48	59	65	71	80	72
25	77	75	78	89	89	90	86	79	70	63	58	52	49	46	44	43	49	51	55	59	61	68	69	69
26	64	66	69	70	75	74	76	60	57	56	55	57	57	58	58	58	80	74	78	78	78	83	89	90
27	92	94	89	90	93	93	78	75	70	63	55	56	55	55	63	59	56	53	55	60	62	63	66	76
28	82	85	84	82	89	89	85	83	81	72	67	62	60	60	56	56	59	60	64	75	84	88	87	86
29	85	88	90	99	96	96	92	88	77	72	59	58	56	55	54	38	40	42	46	56	54	56	63	66
30	66	67	72	72	76	87	87	74	61	59	55	53	52	51	49	44	42	47	54	56	60	60	67	73
31	81	80	76	80	82	82	80	82	73	68	66	68	61	54	49	49	52	53	55	62	67	66	80	82

Unités: pourcent (%) /Units: percent (%)

Environnement Canada Direction de l'environnement atmosphérique

Environment Canada Atmospheric Environment Service

SOMMAIRE MÉTÉOROLOGIQUE MENSUEL
MONTHLY METEOROLOGICAL SUMMARY

Montreal - Dorval (AUTO)

Septembre 1996

September 1996

LAT 45' 28N LONG 73' 45W ALTITUDE 36 METRES (NMM) ÉLÉVATION 36 METRES (ASL) HEURE NORMALE UTILISÉE DE L'EST STANDARD TIME USED Eastern

DATE	TEMPÉRATURE / TEMPERATURE MAXIMALE MAXIMUM °C	MINIMALE MINIMUM °C	MOYENNE MEAN °C	DEGRÉS-JOURS / DEGREE-DAYS DE CHAUFF. HEATING Base 18 °C	DE CROISSANCE GROWING Base 5 °C	DE RÉFRIGÉRATION COOLING Base 18 °C	HUMIDITÉ REL. / REL. HUMIDITY MAXIMALE MAXIMUM %	MINIMALE MINIMUM %	CHANGE TEMPÉRATURE	PRÉCIPITATIONS / PRECIPITATION PLUIE PRÉCIPITATIONS RAINFALL mm	NEIGE PRÉCIPITATIONS SNOWFALL cm	PRÉCIP. TOTAL TOTAL PRECIP mm	HAUTEUR DE NEIGE SNOW ON GROUND cm	VENTS / WINDS VITESSE MOYENNE AVERAGE SPEED km/h	DIRECTION DOMINANTE PREVAILING DIRECTION	VITESSE MAXIMALE MAX. 2 MIN MEAN SPEED & DIRECTION km/h	DIRECTION	MAX 2 MIN MEAN	INSOLATION EFFECTIVE BRIGHT SUNSHINE HEURES HOURS
1	28.3	14.7	21.5		16.5	3.5	88	49						7.0	SSW	SW*	13		12.1
2	28.8	15.5	22.2		17.2	4.2	97	48						9.3	NNE	NNE	20		8.4
3	27.7	15.1	21.4		16.4	3.4	91	52						8.5	N	NNE	17		11.1
4	29.0	15.4	22.2		17.2	4.2	92	53						8.5	NNE*	S	13		10.9
5	29.8	18.6	24.2		19.2	6.2	96	47						12.3	SW	W	22		11.1
6	28.7	16.7	22.7		17.7	4.7	97	35						8.2	NE	NE*	17		10.6
7	27.2	15.6	21.4		16.4	3.4	93	34		5.5		5.5		18.4	NE	SE	31		9.6
8	19.6	14.9	17.3	0.7	12.3		100	79		34.5		34.5		19.4	ESE*	SE	33		0.1
9	20.6	16.7	18.7		13.7	0.7	100	90		2.0		2.0		7.3	W*	W*	13		
10	21.6	13.2	17.4	0.6	12.4		100	71		1.0		1.0		6.0	NW	NNW	11		1.0
11	24.6	11.1	17.9	0.1	12.9		100	54						7.1	ESE	ESE	13		11.0
12	21.0	16.7	18.9		13.9	0.9	98	71		13.0		13.0		13.4	SE	SE	26		
13	21.7	13.0	17.4	0.6	12.4		93	61		1.5		1.5		18.8	NE	NE*	26		5.1
14	16.7	11.8	14.3	3.7	9.3		100	81		9.0		9.0		15.9	NE	NE	24		0.1
15	14.9	11.2	13.1	4.9	8.1		100	91		2.5		2.5		13.7	NNE	NNE	20		
16	15.1	11.5	13.3	4.7	8.3		100	93		6.0		6.0		13.7	NNE	NNE*	19		
17	20.6	12.4	16.5	1.5	11.5		97	62						15.5	NNE	NE	24		7.4
18	23.9	9.3	16.6	1.4	11.6		93	40						15.5	N	NNE	31		10.1
19	23.1	7.6	15.4	2.6	10.4		85	39						10.8	NW	N*	17		11.3
20	21.9	10.9	16.4	1.6	11.4		95	49						14.3	W	W	26		11.0
21	24.0	11.8	17.9	0.1	12.9		93	48						14.5	WSW	WSW	28		10.5
22	16.8	8.3	12.6	5.4	7.6		70	32						24.5	NE	NE*	30		1.0
23	14.2	6.1	10.2	7.8	5.2		84	51						16.0	NNE	NNE*	26		10.0
24	15.3	2.2	8.8	9.2	3.8		100	52		TR		TR		9.1	SE	SSE*	17		4.6
25	13.7	5.0	9.4	8.6	4.4		99	67		1.6		1.6		8.8	NNE	NNE	17		0.6
26	18.1	4.8	11.5	6.5	6.5		100	42						10.8	WSW	W	22		9.1
27	15.9	10.0	13.0	5.0	8.0		99	66		10.0		10.0		19.2	SE	SE	31		0.2
28	17.6	10.4	14.0	4.0	9.0		100	94		25.0		25.0		23.1	SE	W	31		
29	18.3	10.1	14.2	3.8	9.2		97	58	1	3.5		3.5		23.1	SW	SW	30		6.7
30	14.0	5.7	9.9	8.1	4.9		96	55						14.7	W	W	26		7.3
	MOY. MEAN 21.1	MOY. MEAN 11.5	MOY. MEAN 16.3	TOTAL 80.9	TOTAL 340.3	TOTAL 31.2	MOY. MEAN 95	MOY. MEAN 58	TOTAL 1	TOTAL 115.1	TOTAL	TOTAL 115.1		MOY. MEAN 13.6	DOMINANTE PREVAILING NNE	MAXIMALE MAXIMUM SE	33		TOTAL 180.9
NORMALE NORMAL	19.8	9.3	14.5	119.5	286.5	16.0			2	86.5	0	86.5		12.0	SW				169.8

SOMMAIRE DE DEGRÉS-JOURS/DEGREE-DAY SUMMARY

AU-DESSOUS DE 18°C BELOW 18°C	ANNÉE EN COURS THIS YEAR	ANNÉE PRÉCÉDENTE PREVIOUS YEAR	NORMALE NORMAL	AU-DESSUS DE 5°C ABOVE 5°C	ANNÉE EN COURS THIS YEAR	ANNÉE PRÉCÉDENTE PREVIOUS YEAR	NORMALE NORMAL
TOTAL DU MOIS TOTAL FOR MONTH	80.9	143.3	119.5	TOTAL DU MOIS TOTAL FOR MONTH	340.3	250.4	286.5
ACCUMULÉS DEPUIS LE 1ER JUILLET ACCUMULATED SINCE JULY 1	91.7	155.7	153.8	ACCUMULÉS DEPUIS LE 1ER AVRIL ACCUMULATED SINCE APRIL 1	1969.3	2005.0	1927.2

JOURS AVEC PRÉCIPITATIONS TOTALES DAYS WITH TOTAL PRECIPITATION

PRÉC.	0.1 OU PLUS OR MORE	1.0 OU PLUS OR MORE	5.0 OU PLUS OR MORE	10.0 OU PLUS OR MORE	25.0 OU PLUS OR MORE
13	13	10	4		

JOURS AVEC CHUTE DE NEIGE DAYS WITH SNOWFALL

CM	0.1 OU PLUS OR MORE	1.0 OU PLUS OR MORE	5.0 OU PLUS OR MORE	10.0 OU PLUS OR MORE	25.0 OU PLUS OR MORE

Données non vérifiées/Data not validated.

Les précipitations ont un seuil mesurable de 1,0 mm.

Measurable threshold of precipitation is 1.0 mm.

1. Journee climatologique/Climatological Day
2. Normale/Normal 1961-1990
3. TR=Trace
4. M=Manquant/Missing E=Estime/Estimated
5. Pas de valeur/No entry=Pas d'evenement/No occurence
6. C=Calme/Calm

Canada

RELEVÉS COMPARATIFS À:
COMPARATIVE RECORDS AT:

Montreal - Dorval (AUTO)

Septembre 1996
September 1996

		CE MOIS-CI THIS MONTH		ANNÉE PRÉCÉDENTE PREVIOUS YEAR		NORMALE NORMAL	RECORDS POUR LE MOIS RECORDS FOR THE MONTH						
							MAXIMUM ABSOLU HIGHEST EVER			MINIMUM ABSOLU LOWEST EVER			NB. D'ANNÉES NO OF YEARS
		RELEVÉ VALUE	JOUR DAY	RELEVÉ VALUE	JOUR DAY		RELEVÉ VALUE	JOUR DAY	ANNÉE YEAR	RELEVÉ VALUE	JOUR DAY	ANNÉE YEAR	
TEMPÉRATURE MAXIMALE HIGHEST TEMPERATURE MAXIMUM	°CELSIUS	29.8	5	25.0	12		32.8	4	1953				53
TEMPÉRATURE MINIMALE LOWEST TEMPERATURE MINIMUM	°CELSIUS	2.2	24	1.5	24					-2.2	30	1951	53
TEMPÉRATURE MENSUELLE MOYENNE MEAN MONTHLY TEMPERATURE	°CELSIUS	16.3		12.8		14.5	18.6		1961	12.0		1978	53
HAUTEUR TOTALE MENSUELLE DE PLUIE TOTAL MONTHLY RAINFALL	Millimètres (mm) Millimetres (mm)	115.1		59.6		86.5	227.7		1975	11.4		1948	53
HAUTEUR TOTALE MENSUELLE DE NEIGE TOTAL MONTHLY SNOWFALL	Centimètres (cm) Centimetres (cm)						6.1		1946	0.0		1993	53
PRÉCIPITATION TOTALE MENSUELLE TOTAL MONTHLY PRECIPITATION	Millimètres (mm) Millimetres (mm)	115.1		59.6		86.5	227.7		1975	11.4		1948	53
NOMBRE DE JOURS AVEC PRÉCIPITATION MESURABLE NO OF DAYS WITH MEASURABLE PRECIPITATION		13		7		11	19		1975	5		1963	53
HAUTEUR DE PLUIE MAXIMALE EN UNE JOURNÉE GREATEST RAINFALL IN ON DAY	Millimètres (mm) Millimetres (mm)	34.5	8	28.0	7		81.9	14	1979				53
HAUTEUR DE NEIGE MAXIMALE EN UNE JOURNÉE GREATEST SNOWFALL IN ON DAY	Centimètres (cm) Centimetres (cm)						6.1	30	1946				53
PRÉCIPITATION MAXIMALE EN UNE JOURNÉE GREATEST PRECIPITATION IN ONE DAY	Millimètres (mm) Millimetres (mm)	34.5	8	28.0	7		81.9	14	1979				53
HAUTEUR DE PLUIE ENREGISTRÉE EN MAXIMUM RAINFALL RECORDED IN													
5 MINUTES	Millimètres (mm) Millimetres (mm)						8.6	7	1969				50
10 MINUTES	Millimètres (mm) Millimetres (mm)						13.7	7	1969				50
15 MINUTES	Millimètres (mm) Millimetres (mm)						21.3	7	1969				50
30 MINUTES	Millimètres (mm) Millimetres (mm)						37.1	7	1969				50
60 MINUTES	Millimètres (mm) Millimetres (mm)						48.5	7	1969				50
24 HEURES CONSÉCUTIVES CONSECUTIVE HOURS	Millimètres (mm) Millimetres (mm)												
VITESSE MOYENNE DU VENTS (km/h) MEAN WIND SPEED (km/h)		13.6		10.7		12.0	17.2		1975	8.9		1982	41
VITESSE MAXIMALE (MOYENNE SUR 2 MIN.) (km/h) MAXIMUM SPEED (2 MIN. MEAN) (km/h)		SE 33	8	WSW 39	7		NE 61	12	1963				41
POINTE DU VENT MAXIMALE (km/h) MAXIMUM GUST SPEED (km/h)		W 63	29	WSW 57	22		WSW 97	6	1956				38
TOTAL DES HEURES INSOLATION TOTAL HOURS OF SUNSHINE		180.9		215.8		169.8	222.3		1983	102.0		1977	23
PRESSION MOYENNE À LA STATION (kPa) MEAN STATION PRESSURE (kPa)		101.00		101.50		101.26	101.58		1965	100.88		1966	41
PRESSION MAXIMAL À LA STATION (kPa) GREATEST STATION PRESSURE (kPa)		102.45	26	102.53	29		103.21	19	1969				41
PRESSION MINIMALE À LA STATION (kPa) LEAST STATION PRESSURE (kPa)		100.04	8	100.09	14					98.10	23	1989	41

DONNÉES CLIMATOLOGIQUES CE MOIS-CI POUR LES 10 DERNIÈRES ANNÉES
CLIMATOLOGICAL DATA THIS MONTH FOR THE PAST 10 YEARS

ANNÉE YEAR	TEMP MAXIMALE MAXIMUM TEMP	TEMP MINIMALE MINIMUM TEMP	TEMP MOYENNE MEAN TEMP	HAUTEUR DE PLUIE RAINFALL	HAUTEUR DE NEIGE SNOWFALL	PRÉCIP TOTALE TOTAL PRECIP	VITESSE MOYENNE DES VENTS MEAN WIND SPEED	VITESSE MAXIMALE DES VENTS MEAN WIND SPEED	HEURES INSOLATION SUNSHINE HOURS	DEGRÉS-JOURS DE CHAUFFE HEATING DEGREE-DAYS	DEGRÉS-JOURS DE CROISSANCE GROWING DEGREE-DAYS	DEGRÉS-JOURS DE REFROIDISSEMENT COOLING DEGREE-DAYS	A.E.M. S.A.S.
1987	26.4	1.0	15.0	108.2		108.2	12.0	WNW 30	167.6	101.8	298.5	10.3	
1988	26.1	0.2	14.3	41.8		41.8	11.6	SW 35	196.4	121.6	277.7	9.3	
1989	29.1	0.3	15.6	57.4		57.4	11.6	W 44	167.1	98.1	318.9	27.0	
1990	26.5	3.0	14.1	79.2		79.2	11.8	W 46	118.9	120.5	273.5	4.0	
1991	26.9	-1.8	13.5	69.8		69.8	9.8	WSW 33	201.4	146.3	255.7	11.2	
1992	27.9	-0.3	14.6	108.2		108.2	12.3	SW 35	174.4	121.6	289.9	19.8	
1993	28.6	-0.9	14.0	122.6		122.6	11.8	WSW 48	182.5	133.1	269.5	12.3	
1994	24.5	4.0	14.9	67.2		67.2	11.5	WSW 33	169.7	95.9	295.5	1.4	
1995	25.0	1.5	12.8	48.5		48.5	10.7	WSW 39	215.8	143.3	250.4	3.7	
1996	29.8	2.2	16.3	115.1		115.1	13.6	SE 33	180.9	80.9	340.3	31.2	

AVIS/NOTE

Température horaire
Hourly temperature

Montreal - Dorval (AUTO)

Septembre 1996
September 1996

DATE	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22
1	175	172	182	160	158	154	165	179	196	209	227	237	256	278	273	279	275	271	258	225	218	219	213
2	197	181	169	157	164	165	167	184	203	235	249	260	277	280	284	281	275	271	262	247	234	222	206
3	187	185	174	170	167	154	156	166	181	198	213	224	242	259	264	270	264	261	244	218	222	205	208
4	185	182	182	177	167	157	159	176	196	223	233	251	258	273	282	283	283	277	263	251	221	219	215
5	205	197	196	188	188	193	189	204	216	233	245	252	275	282	298	294	289	278	264	233	229	210	208
6	191	205	194	175	175	174	175	198	225	238	256	270	273	277	277	283	275	270	241	219	228	232	224
7	202	191	178	191	177	162	156	174	194	206	223	241	249	256	265	270	261	255	240	233	221	212	219
8	168	171	169	167	152	149	150	151	157	184	184	181	193	192	191	183	178	178	174	173	175	177	179
9	183	185	188	189	175	171	169	168	172	175	176	183	191	192	205	203	200	200	197	190	190	189	186
10	187	184	180	175	174	172	172	182	183	183	200	202	205	196	205	215	209	206	203	190	169	166	164
11	147	137	145	128	131	134	125	157	174	195	210	213	219	221	232	243	226	233	212	210	201	206	204
12	193	186	185	182	177	178	168	174	176	179	181	185	190	209	208	209	204	208	205	194	187	187	187
13	176	173	167	166	161	159	159	169	181	195	204	212	206	195	191	185	174	161	157	142	142	135	133
14	131	131	126	125	122	125	125	125	129	135	146	157	158	163	160	161	156	150	146	143	138	131	128
15	121	120	119	116	113	112	114	114	114	117	120	125	129	139	138	143	143	140	136	134	133	128	127
16	120	119	119	119	119	116	118	121	121	125	128	128	135	138	144	142	146	149	145	143	143	141	142
17	140	135	133	133	129	125	124	128	138	157	170	182	191	194	202	194	196	185	174	162	146	142	135
18	129	128	120	122	117	111	109	130	153	168	188	199	212	217	231	238	232	218	198	174	166	143	132
19	101	96	93	90	97	100	93	116	148	164	180	188	200	208	222	226	221	210	188	171	144	139	137
20	148	130	119	125	128	113	109	135	149	165	181	189	207	212	219	214	212	194	168	164	153	135	134
21	139	145	134	128	132	130	131	136	152	167	187	205	224	231	233	231	229	208	195	173	167	166	144
22	153	163	164	142	126	119	109	108	105	109	112	128	135	137	141	132	133	134	134	133	133	124	115
23	92	84	81	75	69	66	62	72	92	106	117	122	128	135	124	139	125	123	104	100	78	72	67
24	86	76	72	61	37	43	25	75	100	116	125	135	137	147	150	144	139	130	124	122	116	110	111
25	99	91	94	90	90	94	90	91	99	104	108	108	111	115	123	131	128	124	102	99	96	100	95
26	64	60	57	75	76	82	78	76	81	101	128	145	163	177	175	177	173	149	127	111	119	127	128
27	120	115	114	108	105	106	104	110	123	132	132	135	143	147	158	151	152	153	153	147	145	139	142
28	140	142	143	145	146	151	153	154	160	164	169	172	174	174	173	173	173	174	150	146	137	117	104
29	117	121	122	123	132	133	128	133	135	149	148	163	171	179	178	171	168	167	162	155	158	161	111
30	111	102	97	93	90	75	67	82	90	96	115	114	111	115	116	128	128	115	92	72	79	76	75

Unités / Units: 0.1 °C M = Manquant /Missing

Lire / Read -123 = -12.3 °C -1 = -0.1 °C 0 = 0.0 °C 12 = +1.2 °C 123 = +12.3 °C

Heure normale locale: Est Local standard time: Eastern

Vents horaires (km/h)
Hourly winds (km/h)

Montreal - Dorval (AUTO)

Septembre 1996
September 1996

Heure normale locale: Est
Local standard time : Eastern

DATE	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Rafale max Peak Gust	heure time	jour day
1	SW	SSW	SW	WNW	C	C	SW	SW	SW	SSW	SSW	SSW	SSW	S	SW	SSW	SSW	SSW	SSW	WSW	C	C	C	N			
	6	7	11	7	0	0	9	13	9	9	9	11	9	13	9	11	13	7	9	6	0	0	0	6			
2	C	N	NW	W	C	N	NW	NW	N	N	SSW	W	NNW	S	NNE	NNE	N	N	NE	NE	NNE	NE	NNE	NNE			
	0	6	4	6	0	6	4	6	7	6	6	4	6	6	9	9	15	15	13	13	11	13	20	19			
3	NNE	NNE	N	NNE	NNE	N	NNE	NE	N	NNE	N	NE	ENE	NE	ESE	SE	S	S	SE	S	SE	C	ESE	SE			
	17	9	13	13	15	15	17	13	13	9	9	9	4	13	6	6	9	6	7	4	6	0	6	6			
4	C	N	NNE	NNE	N	N	NNE	NNE	N	E	SE	S	S	SSW	S	SW	SSW	S	SSW	SSW	WSW	SW	WSW	SW			
	0	4	9	9	11	11	11	11	9	7	6	6	9	6	13	4	9	11	9	7	7	7	6	9			
5	WSW	W	WSW	SW	SW	SW	WSW	SW	W	SW	SSW	SW	WSW	W	W	W	W	WSW	SW	SW	SW	WSW	WSW	SW	W		
	9	7	9	9	13	13	11	17	15	13	13	13	17	17	22	20	17	17	15	9	7	7	6	4	31	16	5
6	SW	NNW	N	N	N	N	NNE	N	NE	NE	NE	NNE	NE	NNE	NE	NNE	NE	NE	SSE	SSE	ESE	E	E	C			
	6	4	6	4	6	7	7	11	17	11	7	11	11	11	9	17	6	7	7	9	6	7	6	0			
7	NNE	NNE	N	NE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	ESE	SE	NNE		
	7	7	7	13	13	13	17	17	17	24	22	28	20	26	19	17	22	22	19	17	24	13	11	31	39	13	7
8	E	E	E	E	ENE	E	E	ESE	ESE	ESE	ESE	ESE	SE	ESE	SE	ESE	SE	ESE	ESE	SE	SE	SE	SE	SE	SE		
	13	17	17	15	13	9	7	22	26	19	24	28	33	31	24	20	9	13	20	20	22	19	22	19	44	13	8
9	SE	SSE	S	W	NW	NNW	WNW	NNW	NNW	C	C	C	W	WSW	WSW	WSW	W	WSW	WSW	WSW	W	SW	W	WNW			
	19	15	11	13	11	7	9	7	6	0	0	0	11	11	11	9	6	11	13	6	7	7	6	4			
10	W	NW	WSW	W	C	NW	W	WNW	NW	NNW	N	WNW	W	C	WSW	NW	NE	NE	E	E	S	SSW	S	NNW			
	4	4	6	6	0	6	6	9	9	11	6	6	6	0	6	7	9	6	4	6	6	6	7	4			
11	NW	NW	NNE	C	NNW	C	NW	N	NNE	NNE	C	SSW	SW	SW	SE	WSW	S	SSW	SE	SE	ESE	ESE	ESE	E			
	6	6	6	0	6	0	9	6	6	4	0	7	6	6	6	6	9	4	7	13	11	13	13	11			
12	ESE	NE	E	E	ENE	WNW	NE	NNE	ESE	ESE	SE	SE	ESE	SSE	SSE	SSE	SE	SE	SE	SE	SE	SE	SE	SE	SE		
	15	7	9	9	9	4	15	7	6	11	9	9	9	15	17	17	22	22	24	22	20	22	22	22	41	1	12
13	SE	ESE	ESE	NE	NE	NE	ENE	E	ENE	ENE	E	ENE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE		
	26	22	20	9	11	11	11	13	11	13	13	17	17	26	26	26	26	24	24	22	24	22	22	20	52	17	13
14	NE	NE	NE	ENE	NE	NE	NE	NNE	NE	NE	NE	NNE	NNE	N	NNE	NNE	N	N	N	N	NNE	NNE	N	NE	NNE		
	22	20	17	11	24	13	13	17	20	17	15	19	17	17	20	19	13	17	17	13	17	13	11	13	31	4	14
15	NNE	NE	NE	NE	NE	NE	NE	NE	NE	NNE	NE	NE	NNE	NE	N	NNE	NNE	NNE	NNE	NNE	NNE	NNE	N	NNE			
	15	13	15	15	11	9	7	13	13	11	11	13	11	15	17	15	20	17	15	13	15	15	13	11			
16	NNE	NNE	NE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NE	NNE	NNE	NNE	NNE	NNE	N	NNE	NNE	NNE	NE			
	17	17	11	11	11	17	11	9	17	13	15	15	11	13	15	19	17	15	19	13	15	13	11	15			
17	NNE	NNE	NNE	NNE	NE	NNE	NE	NNE	NNE	NE	NE	NE	NE	NNE	NE	NNE	NE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NNE		
	11	11	9	15	13	7	20	17	19	19	17	24	20	19	20	22	20	20	17	13	9	9	9	11	31	11	17
18	NNE	NNE	N	N	N	N	N	N	N	NNE	NNE	NNE	N	NNE	NNE	NNE	NNE	NNE	NNE	N	N	NNW	N	WNW	NNE		
	11	11	11	11	11	11	13	13	24	22	22	31	30	22	24	20	26	17	13	11	9	7	4	6	37	12	18
19	NW	NW	C	NW	NW	N	NNW	NW	N	N	N	N	N	NW	NNW	W	W	WNW	WNW	WNW	NW	NW	NW	NW			
	7	6	0	6	6	6	6	6	13	17	15	17	11	13	11	9	15	13	13	17	9	11	11	13			
20	WNW	W	WNW	NW	S	SW	WSW	SW	SW	WSW	W	W	W	W	WSW	W	W	WNW	W	WNW	WSW	WSW	WSW	SW	WNW		
	11	9	11	7	4	9	11	13	13	15	19	20	19	26	22	22	24	20	13	9	7	9	11	9	39	17	20
21	WSW	W	W	SW	SSW	SW	SSW	SW	WSW	SW	SW	WSW	WSW	WSW	W	WSW	W	WSW	SW	WSW	WSW	NW	WSW	N	W		
	13	17	11	4	7	7	13	13	19	15	19	26	22	28	24	22	26	15	15	13	15	11	7	6	37	14	21
22	C	NE	NE	NE	NNE	NNE	NNE	NE	NNE	NE	NE	NNE	NNE	NE	NNE	NE	NE	NNE	NE	NE	NE	NE	NE	NNE	NE		
	0	11	19	20	19	20	19	28	20	30	28	22	20	26	20	30	30	28	26	24	26	24	30	22	48	20	22
23	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NE	NNE	NNE	N	NNE	NNE	ESE	SE	SE	SSE	SSE	NNE		
	28	-28	26	20	24	24	26	24	24	24	22	22	17	22	19	19	13	11	9	6	9	7	4	4	39	8	23
24	SE	SE	ESE	N	C	E	W	WNW	S	SSW	SE	S	SSW	SSW	ESE	SE	SSE	SE	SE	SE	SE	S	WSW	S			
	4	4	4	6	0	4	4	6	7	9	6	9	6	9	9	11	17	17	11	13	13	11	11	11			
25	S	SE	E	E	NE	NNE	N	N	NNE	NNE	N	NNE	N	NNE	NNW	NNW	WNW	W	W	NW	NNW	C	W	NW			
	15	9	7	9	6	9	9	11	15	17	15	15	15	7	9	7	6	7	9	11	6	0	4	4			
26	SW	WSW	WSW	WSW	W	WSW	WSW	WSW	W	WSW	W	W	W	W	W	W	WSW	WSW	WSW	WSW	C	NE	ENE	E			
	7	7	9	13	13	15	11	11	13	11	15	11	9	19	22	13	9	9	6	7	0	13	7	7			
27	E	ENE	E	E	NE	NE	ENE	E	E	ESE	SE	SE	SE	SE	SE	SSE	SE	SE	SSE	SSE	SSE	SE	SSE	SSE	SE		
	6	11	11	7	11	7	6	11	17	17	17	22	31	30	20	19	24	20	20	28	22	20	24	22	39	12	27
28	SE	SSE	SE	SSE	SE	SE	SE	SSE	SE	SSE	SE	SSE	SE	SSE	SSE	SE	SSE	W	W	WSW	W	W	SW	SSW	SE		
	26	28	30	24	24	24	26	26	28	28	28	24	24	26	22	20	19	31	19	13	24	20	19	17	41	11	28
29	SSW	SSW	SW	SW	SW	SW	SW	SW	SW	SW	WSW	SSW	SSW	SW	SW	SW	SW	SW	SSW	SSW	SSW	SSW	W	WSW	W		
	20	19	19	24	22	17	19	20	26	24	24	22	20	28	28	20	28	30	22	24	24	24	22	20	63	22	29
30	WSW	WSW	W	W	W	WSW	WSW	W	W	W	SW	WSW	W	W	W	W	W	W	WNW	W	W	WNW	SSW	S	SW		
	22	26	22	19	19	17	9	15	13	19	17	20	20	17	26	20	20	20	11	11	9	4	9	4	33	3	30

Avis/Note C= Calme /Calm M= Manquant /Missing

Points de rosée horaires
Hourly dew points

Montreal - Dorval (AUTO)

Septembre 1996
September 1996

DATE	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	141	139	139	132	134	130	137	142	152	156	165	172	177	174	161	168	160	155	152	158	158	167	173	172
2	171	161	159	152	155	156	155	169	165	184	182	183	176	182	180	166	171	150	167	185	193	187	174	169
3	163	162	157	155	148	138	137	137	142	145	150	152	155	158	158	167	166	166	169	167	170	167	170	167
4	167	163	167	162	154	144	142	148	151	174	183	185	189	188	189	187	180	172	174	176	187	188	192	196
5	183	181	183	177	179	183	182	190	190	189	195	194	192	187	188	176	165	172	173	171	183	182	177	180
6	177	183	176	170	167	148	143	144	133	132	129	119	116	113	121	113	114	120	137	141	138	138	140	137
7	137	156	155	155	149	143	130	123	115	123	100	81	78	94	94	103	112	108	129	123	128	136	134	150
8	157	144	138	141	138	135	140	138	141	146	146	153	155	155	157	165	169	173	172	173	175	177	179	181
9	183	185	188	189	175	171	169	168	172	172	174	183	190	191	192	186	189	187	185	189	186	185	183	182
10	184	182	180	175	174	172	172	179	180	180	182	174	173	183	178	175	167	155	149	148	140	152	151	150
11	147	137	140	128	131	134	125	146	141	142	146	152	149	149	146	145	143	143	144	144	145	146	147	145
12	148	149	150	150	154	164	155	158	173	173	176	181	183	182	167	155	153	157	150	141	140	140	138	136
13	134	134	137	135	131	128	130	131	137	136	137	138	127	117	119	118	114	114	112	125	121	117	115	118
14	119	120	123	123	121	123	123	125	125	125	129	135	134	134	128	131	132	130	126	129	126	127	127	122
15	121	117	114	115	112	112	113	111	112	117	118	123	123	130	127	130	128	128	125	122	120	117	117	116
16	114	113	111	112	114	114	118	119	121	125	127	127	133	133	137	138	138	138	138	136	136	138	137	134
17	131	130	128	128	123	121	113	119	118	128	129	126	130	132	126	128	122	116	112	115	112	111	106	103
18	102	98	96	96	94	97	98	109	107	110	115	120	115	107	111	93	93	93	84	86	71	77	73	76
19	75	64	61	55	54	62	61	92	81	86	81	83	74	81	78	80	94	106	103	95	91	93	102	100
20	101	100	97	100	107	104	101	116	122	123	128	129	131	112	121	104	104	94	100	103	105	107	113	111
21	114	117	113	115	117	118	120	120	119	118	124	123	128	122	120	118	113	116	122	106	120	129	124	116
22	112	110	70	46	61	55	45	27	39	32	30	36	37	37	42	12	-16	-26	-28	6	-1	7	24	33
23	32	33	29	29	30	33	34	38	43	49	46	43	44	37	30	44	35	32	33	35	30	39	32	42
24	50	50	45	46	34	38	21	75	86	81	75	57	45	63	52	60	58	62	59	64	68	76	81	71
25	67	79	80	67	66	61	71	76	80	80	75	75	73	68	71	71	79	79	73	75	72	76	85	83
26	60	58	57	75	76	82	78	76	81	91	87	90	64	53	46	61	54	67	47	53	57	60	56	59
27	57	61	58	63	63	63	60	60	62	72	91	104	108	111	111	113	110	109	108	117	124	132	136	138
28	138	138	138	138	138	142	145	150	155	159	165	167	171	170	170	173	172	174	150	146	137	113	95	107
29	111	116	116	118	122	122	114	115	109	111	100	100	99	94	96	100	98	92	89	98	96	101	103	106
30	103	92	88	84	74	67	61	72	70	72	73	62	61	52	41	45	44	29	34	33	39	41	55	65

Unités / Units: 0.1 °C

M = Manquant / Missing

Humidités relatives horaires
Hourly relative humidities

Montreal - Dorval (AUTO)

Septembre 1996
September 1996

DATE	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	80	81	76	83	86	86	84	79	76	72	68	67	62	53	50	51	50	49	52	66	69	72	78	78
2	85	88	94	97	94	94	93	91	79	73	66	63	54	55	53	50	53	48	56	68	78	81	82	85
3	86	86	90	91	89	90	88	83	78	71	67	64	58	54	52	53	55	56	63	73	72	79	79	81
4	89	89	91	91	92	92	90	84	75	74	74	67	66	60	57	56	54	53	58	63	81	83	87	88
5	87	90	92	93	95	94	96	92	85	76	74	70	61	56	52	49	47	53	57	68	75	84	82	78
6	92	87	89	97	95	85	82	71	56	51	45	39	38	36	38	35	37	39	52	61	57	55	59	59
7	66	80	86	80	84	89	85	72	60	59	46	36	34	36	34	35	39	40	50	50	56	62	59	89
8	93	84	82	85	91	91	94	92	90	79	79	84	79	79	81	89	94	97	99	100	100	100	100	100
9	100	100	100	100	100	100	100	100	100	98	99	100	99	99	92	90	93	92	93	99	98	98	98	98
10	98	99	100	100	100	100	100	98	98	98	89	84	82	92	85	78	77	73	71	77	83	91	92	97
11	100	100	97	100	100	100	100	93	81	71	67	68	64	64	58	54	59	57	65	66	70	68	70	70
12	75	79	80	82	86	92	92	90	98	96	97	98	96	85	77	71	73	73	71	71	74	74	73	73
13	76	78	82	82	82	82	83	78	75	69	65	63	61	61	63	65	68	74	75	90	87	89	89	92
14	92	93	98	99	99	99	99	100	97	94	90	87	86	83	81	82	86	88	88	91	92	97	99	99
15	100	98	97	99	99	100	99	98	99	100	99	99	96	94	93	92	91	92	93	92	92	93	94	94
16	96	96	95	95	97	99	100	99	100	100	99	99	99	97	96	97	95	93	96	96	96	98	97	93
17	94	97	97	97	96	97	93	94	88	83	77	70	68	67	62	66	62	64	67	74	80	82	83	81
18	84	82	85	84	86	91	93	87	74	69	63	60	54	50	47	40	41	45	48	56	53	64	67	77
19	84	80	80	79	75	77	80	85	64	60	52	50	44	44	40	39	44	51	58	61	70	74	79	79
20	73	82	86	85	87	94	95	88	84	76	71	68	62	53	54	49	50	52	64	67	73	83	87	81
21	85	83	87	92	91	92	93	90	81	73	67	59	55	50	49	49	48	56	63	65	74	79	88	76
22	77	71	54	52	65	65	65	57	64	59	57	53	51	51	51	44	36	33	32	42	40	45	54	62
23	66	70	70	73	76	79	82	79	71	68	62	58	57	51	53	53	54	54	61	64	72	80	78	83
24	78	84	83	90	98	97	97	100	91	79	72	59	54	57	52	57	58	63	64	68	72	80	82	78
25	80	92	91	85	85	80	88	90	88	85	80	80	77	73	71	67	72	74	82	85	85	85	93	92
26	97	99	100	100	100	100	100	100	100	93	76	70	52	44	42	46	45	58	58	67	66	64	62	65
27	65	69	68	74	75	75	74	71	66	67	76	82	79	79	74	78	76	75	75	82	87	96	96	97
28	99	97	97	96	95	94	95	97	97	97	97	97	98	98	98	100	99	100	100	100	100	97	94	95
29	96	97	96	97	94	93	91	89	84	78	73	66	63	58	59	63	63	61	62	69	67	68	95	95
30	95	94	94	94	90	95	96	93	87	85	75	70	71	65	60	57	57	55	67	76	76	78	87	91

Unités: pourcent (%) /Units: percent (%)

Environnement Canada Direction de l'environnement atmosphérique

Environment Canada Atmospheric Environment Branch

SOMMAIRE MÉTÉOROLOGIQUE MENSUEL
MONTHLY METEOROLOGICAL SUMMARY

Montreal - Dorval (AUTO)

Octobre 1996

October 1996

LAT 45° 28N LONG 73° 45W ALTITUDE 36 METRES (NMM) ÉLÉVATION 36 METRES (ASL) HEURE NORMALE UTILISÉE STANDARD TIME USED DE L'EST Eastern

DATE	TEMPERATURE / TEMPERATURE MAXIMALE MAXIMUM °C	MINIMALE MINIMUM °C	MOYENNE MEAN °C	DEGRÉS-JOURS / DEGREE-DAYS DE CHAUFFE HEATING Base 18 °C	DE CROISSANCE GROWING Base 5 °C	DE RÉFRIGÉRATION COOLING Base 18 °C	HUMIDITÉ REL. / REL. HUMIDITY MAXIMALE MAXIMUM %	MINIMALE MINIMUM %	ORAGE THUNDERSTORM	PRÉCIPITATIONS / PRECIPITATION PLUIE (PLUVIOMÈTRE) RAINFALL mm	NEIGE (PLUVIOMÈTRE) SNOWFALL cm	PRÉCIP. TOTAL TOTAL PRECIP mm	HAUTEUR AU SOL DU NEIGE ON GROUND cm	VITESSE DES VENTS / WINDS MAXIMALE MAXIMUM SPEED km/h	DIRECTION DOMINANTE PREVAILING DIRECTION	VITESSE DES VENTS / WINDS MAX. DURÉE 2 MIN & DIRECTION / MAX 2 MIN MEAN SPEED & DIRECTION km/h		INSOLATION EFFECTIVE BRIGHT SUNSHINE HEURES HOURS
1	22.3	8.1	15.2	2.8	10.2		91	58						10.4	SSE	SW*	17	5.2
2	19.6	6.9	13.3	4.7	8.3		95	72		3.5		3.5		19.2	SSE	WNW	35	0.3
3	7.1	-0.6	3.3	14.7			84	50						18.5	W	WNW	35	2.9
4	8.4	-2.2	3.1	14.9			91	44						10.9	NW	NW*	17	6.6
5	10.9	-4.0	3.5	14.5			94	44						6.7	SSE	SSE*	11	10.4
6	17.2	2.0	9.6	8.4	4.6		82	46						12.4	SSE	S*	17	9.3
7	19.7	6.0	12.9	5.1	7.9		92	55						7.8	SSE	SE*	13	6.6
8	13.6	9.5	11.6	6.4	6.6		96	72						16.3	NNE	NNE	24	1.2
9	14.4	8.3	11.4	6.6	6.4		97	79						12.3	WSW	WSW	22	2.7
10	11.0	1.9	6.5	11.5	1.5		99	68		14.0		14.0		14.4	N	N	26	
11	7.4	-3.3	2.1	15.9			91	46						14.5	WSW	WSW*	22	10.0
12	13.4	0.6	7.0	11.0	2.0		94	61		0.5		0.5		6.9	SE	WSW*	13	3.1
13	15.6	9.0	12.3	5.7	7.3		93	80		1.5		1.5		11.4	SE	SW	22	0.2
14	16.0	-2.8	6.6	11.4	1.6		83	45						27.7	WNW	W*	43	5.0
15	7.6	-3.6	2.0	16.0			67	35						15.8	WNW*	W*	24	9.6
16	14.8	4.5	9.7	8.3	4.7		89	58						10.5	SW	SW	19	6.8
17	8.9	3.4	6.2	11.8	1.2		80	39						11.2	NE	NE*	17	7.4
18	15.3	1.8	8.6	9.4	3.6		68	43						17.8	NE*	NE*	24	7.8
19	15.3	5.3	10.3	7.7	5.3		76	39						16.1	NE	NE	26	7.1
20	11.8	6.0	8.9	9.1	3.9		95	46		11.0		11.0		26.1	NE	NE*	33	
21	6.9	5.4	6.2	11.8	1.2		100	95		31.0		31.0		26.0	NE	NE*	33	
22	9.6	6.2	7.9	10.1	2.9		100	95		2.0		2.0		12.0	NE	NE	24	
23	14.0	6.9	10.5	7.5	5.5		100	64		2.0		2.0		11.7	NE	W	30	4.4
24	12.6	7.3	10.0	8.0	5.0		99	62		0.5		0.5		21.1	SW	SW*	30	4.4
25	11.8	2.5	7.2	10.8	2.2		90	61						22.5	WSW	WSW*	35	0.9
26	13.9	1.4	7.7	10.3	2.7		100	60						5.2	SSW	SSW	13	8.0
27	15.6	3.3	9.5	8.5	4.5		98	57		0.5		0.5		9.3	NNE	SW	22	6.0
28	15.4	5.1	10.3	7.7	5.3		92	45						25.0	W	WSW	31	1.0
29	10.3	0.4	5.4	12.6	0.4		78	40						12.7	W*	W	22	9.0
30	11.7	3.3	7.5	10.5	2.5		99	66		7.5	TR	7.5		23.5	E	SE	35	
31	10.0	0.6	5.3	12.7	0.3		85	45		0.5		0.5		29.4	WSW	WSW	43	3.1
	MOY. 13.0 MEAN	MOY. 3.2 MEAN	MOY. 8.1 MEAN	TOTAL 306.4	TOTAL 107.6	TOTAL	MOY. 90 MEAN	MOY. 57 MEAN	TOTAL	TOTAL 74.5	TOTAL TR	TOTAL 74.5		MOY. 15.7 MEAN	DOMINANTE PREVAILING	MAXIMALE MAXIMUM W*	43	TOTAL 139.0
NORMALE NORMAL	13.0	3.6	8.3	300.7	121.3	.7				72.8	2.6	75.4		14.0	W			141.1

SOMMAIRE DE DEGRÉS-JOURS/DEGREE-DAY SUMMARY

AU-DESSOUS DE 18°C / BELOW 18°C	ANNÉE EN COURS / THIS YEAR	ANNÉE PRÉCÉDENTE / PREVIOUS YEAR	NORMALE / NORMAL	AU-DESSUS DE 5°C / ABOVE 5°C	ANNÉE EN COURS / THIS YEAR	ANNÉE PRÉCÉDENTE / PREVIOUS YEAR	NORMALE / NORMAL
TOTAL DU MOIS / TOTAL FOR MONTH	306.4	210.8	300.7	TOTAL DU MOIS / TOTAL FOR MONTH	107.6	201.2	121.3
ACCUMULÉS DEPUIS LE 1ER JUILLET / ACCUMULATED SINCE JULY 1	398.1	366.5	454.5	ACCUMULÉS DEPUIS LE 1ER AVRIL / ACCUMULATED SINCE APRIL 1	2076.9	2206.2	2048.5

JOURS AVEC PRÉCIPITATIONS TOTALES / DAYS WITH TOTAL PRECIPITATIONS

0.1 OU PLUS / OR MORE	1.0 OU PLUS / OR MORE	5.0 OU PLUS / OR MORE	10.0 OU PLUS / OR MORE	50.0 OU PLUS / OR MORE
12	8	7	3	

JOURS AVEC CHUTES DE NEIGE / DAYS WITH SNOWFALL

0.1 OU PLUS / OR MORE	1.0 OU PLUS / OR MORE	5.0 OU PLUS / OR MORE	10.0 OU PLUS / OR MORE	50.0 OU PLUS / OR MORE

Données non corrigées/Data not validated

Les précipitations ont un seuil mesurable de 1,0 mm

Measurable threshold of precipitation is 1,0 mm

1. Journée climatologique/Climatological Day
2. Normale/Normal 1961-1990
3. TR=Trace
4. M=Manquant/Missing E=Estimé/Estimated
5. Pas de valeur/No entry=Pas d'événement/No occurrence
6. C=Calme/Calm

Canada

RELEVÉS COMPARATIFS À:
COMPARATIVE RECORDS AT:

Montreal - Dorval (AUTO)

Octobre 1996
October 1996

		CE MOIS-CI THIS MONTH		ANNÉE PRÉCÉDENTE PREVIOUS YEAR		NORMALE NORMAL	RECORDS POUR LE MOIS RECORDS FOR THE MONTH						
							MAXIMUM ABSOLU HIGHEST EVER			MINIMUM ABSOLU LOWEST EVER			NBR. D'ANNÉES NO OF YEARS
		RELEVÉ VALUE	JOUR DAY	RELEVÉ VALUE	JOUR DAY		RELEVÉ VALUE	JOUR DAY	ANNÉE YEAR	RELEVÉ VALUE	JOUR DAY	ANNÉE YEAR	
TEMPÉRATURE MAXIMALE HIGHEST TEMPERATURE (MAXIMUM)	°CELSIUS	22.3	1	25.5	13		28.3	2	1968				57
TEMPÉRATURE MINIMALE LOWEST TEMPERATURE (MINIMUM)	°CELSIUS	-4.0	5	-2.0	30					-7.2	20	1972	57
TEMPÉRATURE MENSUELLE MOYENNE MEAN MONTHLY TEMPERATURE	°CELSIUS	8.1		11.2		8.3	12.8		1947	5.1		1974	57
HAUTEUR TOTALE MENSUELLE DE PLUIE TOTAL MONTHLY RAINFALL	Millimètres (mm) Millimetres (mm)	74.5		182.7		72.8	139.2		1959	14.0		1963	57
HAUTEUR TOTALE MENSUELLE DE NEIGE TOTAL MONTHLY SNOWFALL	Centimètres (cm) Centimetres (cm)	TR		TR			22.4		1988	0.0		1994	57
PRÉCIPITATION TOTALE MENSUELLE TOTAL MONTHLY PRECIPITATION	Millimètres (mm) Millimetres (mm)	74.5		182.7		75.4	143.0		1959	14.0		1963	57
NOMBRE DE JOURS AVEC PRÉCIPITATION MESURABLE NO OF DAYS WITH MEASURABLE PRECIPITATION		12		14		13	20		1990	3		1963	57
HAUTEUR DE PLUIE MAXIMALE EN UNE JOURNÉE GREATEST RAINFALL IN ONE DAY	Millimètres (mm) Millimetres (mm)	31.0	21	80.5	6		63.8	20	1989				57
HAUTEUR DE NEIGE MAXIMALE EN UNE JOURNÉE GREATEST SNOWFALL IN ONE DAY	Centimètres (cm) Centimetres (cm)	TR		TR			21.2	22	1988				57
PRÉCIPITATION MAXIMALE EN UNE JOURNÉE GREATEST PRECIPITATION IN ONE DAY	Millimètres (mm) Millimetres (mm)	31.0	21	80.5	6		80.5	6	1995				57
HAUTEUR DE PLUIE ENREGISTRÉE EN: MAXIMUM RAINFALL RECORDED IN:													
5 MINUTES	Millimètres (mm) Millimetres (mm)						4.7	5	1979				56
10 MINUTES	Millimètres (mm) Millimetres (mm)						7.6	24	1959				56
15 MINUTES	Millimètres (mm) Millimetres (mm)						9.1	24	1959				56
30 MINUTES	Millimètres (mm) Millimetres (mm)						17.0	24	1959				56
60 MINUTES	Millimètres (mm) Millimetres (mm)						27.7	24	1959				56
24 HEURES CONSÉCUTIVES CONSECUTIVE HOURS	Millimètres (mm) Millimetres (mm)												57
VITESSE MOYENNE DU VENTS (KM/H) MEAN WIND SPEED (KM/H)		15.7		17.0		14.0	20.6		1959	10.6		1984	57
VITESSE MAXIMALE (KM/H) MAXIMUM SPEED (KM/H)		W 43	14	WNW 39	29		SW 60	19	1967				43
POINTE DU VENT MAXIMALE (KM/H) MAXIMUM GUST SPEED (KM/H)		WSW 61	31	WSW 69	16		SSW 117	6	1979				39
TOTAL DES HEURES D'INSOLATION TOTAL HOURS OF SUNSHINE		139.0		137.5		141.1	225.4		1963	67.0		1994	29
PRESSION MOYENNE À LA STATION (KPa) MEAN STATION PRESSURE (KPa)		101.23		M		101.28	101.93		1956	100.76		1979	57
PRESSION MAXIMALE À LA STATION (KPa) GREATEST STATION PRESSURE (KPa)		103.46	5	102.38	19		103.79	25	1956				57
PRESSION MINIMALE À LA STATION (KPa) LEAST STATION PRESSURE (KPa)		99.07	30	99.21	29					97.82	19	1967	57

DONNÉES CLIMATOLOGIQUES CE MOIS-CI POUR LES 10 DERNIÈRES ANNÉES
CLIMATOLOGICAL DATA THIS MONTH FOR THE PAST 10 YEARS

ANNÉE YEAR	TEMP. MAXIMALE MAXIMUM TEMP.	TEMP. MINIMALE MINIMUM TEMP.	TEMP. MOYENNE MEAN TEMP.	HAUTEUR DE PLUIE RAINFALL	HAUTEUR DE NEIGE SNOWFALL	PRÉCIP. TOTALE TOTAL PRECIP.	VITESSE MOYENNE DES VENTS MEAN WIND SPEED	VITESSE MAXIMALE DES VENTS MEAN WIND SPEED	HEURES D'INSOLATION SUNSHINE HOURS	DEGRÉS-JOURS DE CHAUFFE HEATING DEGREE-DAYS	DEGRÉS-JOURS DE CROISSANCE GROWING DEGREE-DAYS	DEGRÉS-JOURS DE RÉFRIGÉRATION COOLING DEGREE-DAYS	A.S.N. S.A.S.
1987	20.1	-4.1	7.6	56.5	0.4	56.9	11.9	SW 31	141.1	321.2	94.8		0.4
1988	23.0	-6.9	6.2	65.4	22.4	87.8	15.6	WSW 39	80.1	367.0	66.7	1.2	22.4
1989	24.4	-1.4	9.4	118.8	5.8	125.0	14.3	ENE 37	153.0	265.1	145.6		5.8
1990	25.4	-5.6	8.5	118.8		118.8	15.5	W 52	128.2	294.5	127.7		
1991	24.5	-2.8	9.5	70.7		70.7	12.2	SSE 24	136.4	265.6	146.5	1.0	
1992	20.6	-5.9	6.5	78.6	0.4	79.0	12.3	SE 22	119.8	356.4	75.5		0.4
1993	20.8	-5.3	6.5	122.4	0.8	123.2	15.9	W 35	122.2	358.0	64.6		0.8
1994	24.2	-2.8	9.5	19.8		19.8	10.3	WSW 37	161.1	264.7	139.8		
1995	25.5	-2.0	11.2	182.7	TR	182.7	17.0	WSW 46	137.5	210.8	201.2	0.5	TR
1996	22.3	-4.0	8.1	74.5	TR	74.5	15.7	W* 43	139.0	306.4	107.6		TR

AVIS/NOTE:

Température horaire
Hourly temperature

Montreal - Dorval (AUTO)

Octobre 1996
October 1996

DATE	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	2
1	86	85	91	86	95	96	98	103	114	122	135	146	174	200	210	220	221	207	181	165	156	155	146	15
2	140	139	137	135	138	142	147	150	163	173	177	177	177	187	191	189	184	172	176	180	166	172	174	12
3	101	69	57	51	44	37	33	37	40	45	50	53	58	59	56	67	55	51	44	13	19	-2	0	1
4	2	5	-4	-11	-2	-13	-16	8	35	49	63	69	76	79	72	73	72	54	24	25	18	22	2	-1
5	-1	-22	-13	-6	-1	-17	-39	-14	35	54	72	86	90	101	102	107	107	90	67	76	78	45	57	3
6	40	39	42	41	41	28	35	58	76	108	124	139	153	163	167	167	161	141	124	117	110	101	86	91
7	80	72	75	76	70	76	80	92	106	123	139	161	180	188	189	197	188	178	154	173	152	147	158	14
8	125	126	129	131	130	127	123	114	114	111	111	115	129	129	129	128	124	115	112	108	105	101	103	10
9	98	96	96	95	97	95	90	92	106	121	133	133	130	124	125	118	120	115	109	107	107	107	108	10
10	104	104	104	104	105	101	104	109	106	95	88	84	82	69	68	67	65	62	63	58	52	48	41	32
11	24	20	12	-1	-13	-23	-32	-9	18	31	39	55	58	60	67	67	66	55	36	43	49	49	49	44
12	39	13	19	14	21	25	33	35	56	74	96	103	107	127	123	119	105	87	89	90	87	86	92	91
13	92	93	96	90	96	96	97	98	100	102	107	106	113	114	118	129	133	118	127	115	135	141	139	134
14	139	155	159	153	144	107	92	85	90	87	94	96	96	96	99	90	79	60	48	40	28	26	14	15
15	-2	-26	-16	-15	-20	-20	-20	-15	-1	14	24	36	51	62	69	73	59	56	54	53	48	52	53	48
16	50	57	48	50	53	50	47	55	65	73	83	104	124	130	142	146	145	129	121	124	112	110	96	72
17	60	56	51	51	45	39	37	40	44	47	58	65	70	79	83	86	84	72	71	61	58	54	52	52
18	58	56	51	39	30	27	23	20	28	49	63	85	109	128	143	145	145	144	143	128	115	114	110	102
19	100	100	97	90	82	63	57	55	70	91	113	121	135	146	149	152	147	120	125	114	107	100	96	90
20	86	83	74	71	70	68	67	68	72	77	89	97	102	96	112	117	116	109	90	78	88	72	68	66
21	63	61	58	58	57	57	55	55	56	57	56	55	55	58	60	63	65	65	66	67	66	68	67	67
22	66	63	63	62	62	63	65	66	68	72	77	86	86	89	90	93	88	86	84	82	81	71	81	75
23	74	75	74	73	72	73	75	79	83	96	100	109	126	129	138	138	137	135	128	124	128	122	122	127
24	114	103	95	84	86	77	84	95	98	105	112	114	117	116	107	105	102	104	103	107	105	104	107	113
25	112	113	110	109	107	103	96	97	100	103	107	107	106	108	108	112	106	99	102	96	77	55	73	58
26	37	34	36	39	42	25	15	37	64	83	102	114	122	135	138	137	131	114	92	68	88	75	72	62
27	58	55	52	50	44	43	51	51	56	71	95	110	127	139	147	153	151	141	124	123	110	104	103	102
28	94	153	151	144	151	149	139	127	126	128	125	124	137	107	116	102	103	99	92	79	74	60	57	63
29	58	51	33	35	37	30	15	13	49	62	73	71	85	96	100	97	88	65	42	40	56	29	57	46
30	37	41	38	34	34	39	37	44	41	41	44	52	66	70	73	67	70	75	84	105	101	115	114	107
31	104	99	93	72	72	66	62	55	53	58	63	67	77	86	74	60	53	28	24	20	14	14	22	15

Unités / Units: 0.1 °C M = Manquant /Missing

Lire / Read -123 = -12.3 °C -1 = -0.1 °C 0 = 0.0 °C 12 = +1.2 °C 123 = +12.3 °C

Heure normale locale: Est

Local standard time: Eastern

Vents horaires (km/h)
Hourly winds (km/h)

Montreal - Dorval (AUTO)

Octobre 1996
October 1996

Heure normale locale: Est
Local standard time : Eastern

DATE	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Rafale max Peak Gust	heure time	jour day
1	SSE	SSE	C	S	SE	ESE	SSE	SSE	SE	C	SSE	SE	SSE	SSW	S	S	SW	SSW	SE	SSE	SSE	SSE	SE	SSE			
	7	4	0	6	6	7	9	11	11	0	11	4	13	11	9	15	17	9	15	11	11	13	15	17			
2	SE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	S	SSE	S	SSE	S	S	WNW	W		
	13	15	15	17	15	15	17	19	20	19	17	17	17	20	15	15	15	19	13	17	15	26	20	35	57	23	2
3	W	WNW	WNW	W	W	W	W	W	W	WNW	NW	WNW	NW	W	WNW	W	NW	WNW	WNW	W	WNW	W	W	W	WNW		
	33	30	35	20	22	20	24	20	28	31	20	24	20	22	19	28	15	15	11	11	7	7	7	11	50	2	3
4	WNW	WNW	NW	WNW	NW	NW	WNW	W	NW	NNW	NW	NNW	WNW	WNW	W	W	WNW	W	W	WNW	NW	NNW	C	W			
	11	15	9	11	13	13	11	9	17	15	17	15	17	11	15	15	13	15	9	9	7	4	0	6			
5	NW	NNE	NNW	NNW	NNE	NNE	N	NNW	NNE	NNE	SSW	S	SSW	SSE	S	S	SSE	SE	SE	SE	E	E	SE	SSE			
	7	4	4	6	6	6	4	4	4	6	6	7	7	11	7	9	4	11	9	6	6	4	9	7			
6	SSE	SSE	SE	ESE	SE	SE	SSE	SSE	SSE	S	SSW	SSW	S	SSE	S	SSE	SE	SSE	SSE	SSE	SSE	SSE	SSE	SE			
	9	9	7	6	4	13	11	13	11	15	15	15	17	11	9	15	17	17	17	17	15	15	13	6			
7	SE	SE	SE	ESE	SE	SE	SE	SSE	SSE	SSE	SSE	SSE	SW	WSW	SW	S	C	C	NNW	E	SSE	S	SW	C			
	9	9	9	4	13	11	11	11	11	11	9	9	11	13	4	6	0	0	7	4	7	9	13	0			
8	WNW	WNW	SW	C	N	N	NNE	NNE	NE	NNE	NE	NNE	NNE	NE	NE	NE	NNE	NE	NNE	NNE	NNE	NNE	NNE	NNE	NNE		
	6	7	4	0	4	6	19	13	22	24	17	19	20	20	22	22	19	20	20	17	17	19	19	15	31	10	8
9	NNE	N	NNE	NNE	NE	NNE	N	N	N	NNW	W	W	SSW	SW	SW	W	WSW	WSW	WSW	SW	WSW	WSW	SW	SW			
	15	17	13	11	7	9	11	9	11	9	7	9	17	15	13	15	17	22	13	17	13	13	15	15			
10	WSW	W	SW	W	C	NNW	C	N	N	N	N	N	N	N	N	N	NNW	NW	NNW	N	NNW	NNW	NNW	N	N		
	7	7	6	6	0	4	0	6	7	20	19	19	24	24	26	19	17	11	17	17	19	15	24	20	41	13	10
11	N	NNW	NW	NW	NW	WNW	NW	NW	WNW	WNW	W	WNW	WSW	W	WSW	W	WSW	WSW	WSW	SW	WSW	SW	SW	SW	WSW		
	15	11	7	7	7	9	9	9	15	17	9	15	13	20	11	19	22	19	13	13	20	22	22	20	33	22	11
12	WSW	WSW	WSW	NW	N	NNW	ESE	C	C	SW	WSW	W	WSW	SSW	W	W	W	WNW	C	SE	SE	SE	ESE	SE	WSW		
	20	11	11	6	4	4	7	0	0	6	13	13	7	9	9	4	11	6	0	7	7	7	9	6	31	17	12
13	SE	SE	ESE	NNW	ESE	SE	SE	ESE	SE	SSE	SE	SE	SSE	SE	SE	SE	ESE	SE	S	SSE	S	SW	SSW	S	SW		
	9	11	7	6	6	6	9	6	11	9	13	17	17	17	11	13	9	9	7	7	13	20	11	15	35	1	13
14	S	SW	SW	WSW	W	NW	WNW	W	W	W	W	W	WNW	WNW	WNW	WNW	WNW	WNW	WNW	NW	WNW	WNW	WNW	WNW	W		
	13	22	26	28	26	28	37	22	30	43	30	30	24	35	43	31	35	35	28	26	17	22	20	19	59	9	14
15	NW	WNW	WNW	NW	WNW	WNW	WNW	WNW	WNW	W	W	W	WSW	WSW	W	W	W	WSW	WSW	WSW	W	WSW	WSW	WNW	W		
	17	13	13	19	13	19	19	15	17	15	24	20	19	20	24	20	20	20	17	13	9	9	13	4	37	11	15
16	SW	SSW	WNW	W	C	C	WSW	SW	WSW	WSW	SSW	SW	SW	S	SSW	SW	SW	SW	SW	SW	WSW	WSW	WNW	NE			
	9	7	4	4	0	0	6	7	9	9	11	13	11	13	15	19	17	13	15	13	15	15	9	11			
17	NE	NE	NNE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	ENE	NE	E	E	ENE	E	E	NE			
	11	13	7	11	11	13	13	15	13	15	13	17	15	7	13	17	6	6	6	6	11	11	9	7			
18	NE	NE	NE	NE	NE	NE	NE	NNE	NNE	NE	NNE	NE	ENE	ENE	ENE	ESE	ESE	ESE	E	ESE	E	E	E	E	ESE		
	11	15	24	19	15	17	15	20	20	17	20	22	13	11	13	24	24	20	15	24	15	19	17	15	39	17	18
19	E	E	E	E	NE	NE	NE	NNE	NNE	NE	ENE	NE	ENE	ENE	NE	NE	NE	NNE	NE	NE	NE	NE	NE	NE	NE		
	15	13	13	11	9	17	17	15	15	15	11	15	11	19	20	13	19	17	13	19	15	17	17	24	31	1	19
20	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE		
	19	26	26	24	26	26	28	24	26	20	26	20	26	24	30	26	30	28	24	24	26	33	33	26	46	17	20
21	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NNE	NE	NE	NE	NE	NE	NE	NE	NE	NNE	NE		
	26	24	31	31	30	31	33	28	26	30	33	31	33	26	24	26	28	19	15	15	19	22	22	24	48	3	21
22	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	E	SW	NW	WSW	W	WSW	WSW	WSW	W	W	WSW	NNW	NNE		
	26	20	22	24	22	22	20	20	19	19	13	4	6	6	6	6	7	7	9	13	11	6	9	7	39	2	22
23	N	NNE	NE	SSE	NE	C	ESE	E	E	NE	E	E	E	E	ENE	ENE	ENE	NE	NE	NE	NE	ENE	NE	E	W		
	4	6	6	4	6	0	7	9	9	13	17	15	15	20	15	13	11	15	15	15	13	7	9	9	54	1	23
24	NE	W	W	W	SSW	S	SSE	SSW	SW	SW	SW	WSW	WSW	SW	SW	SW	SW	SSW	S	SW	SW	SW	SW	SW	WSW		
	7	30	22	7	9	13	13	19	24	30	30	28	22	24	26	17	7	11	15	28	28	26	24	30	46	12	24
25	SW	SW	SW	SW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	W	W	W	W	W	WSW	W	W	W	WNW	NNW	SW	WSW		
	26	28	28	33	28	22	22	20	24	31	35	35	35	30	33	35	22	22	22	13	11	6	6	13	52	9	25
26	WSW	W	W	W	C	C	W	C	WSW	WSW	C	S	SSW	S	SSW	SSW	SSW	SW	WSW	SW	SW	C	C	NNE			
	7	6	4	4	0	0	4	0	4	6	0	6	6	9	7	9	13	9	7	7	6	0	0	7			
27	N	NNE	NNE	NNE	NNE	N	NE	NNE	NNE	NE	NNE	NE	NE	E	E	ENE	NE	NNE	N	C	N	NW	WNW	SE			
	6	11	9	11	9	9	13	9	15	13	11	9	11	13	9	7	9	9	9	0	7	6	4	6			
28	SW	SW	SW	SW	SW	W	WSW	W	WSW	W	W	W	W	WNW	W	W	WNW	W	W	WNW	W	W	WNW	WNW	WSW		
	4	22	22	20	20	28	31	20	28	26	26	30	30	26	28	30	26	20	20	22	24	26	19	26	46	12	28
29	WNW	WNW	W	WNW	WNW	WNW	WNW	W	WNW	NW	W	WNW	WNW	W	W	NW	W	WNW	W	W	C	C	E	ESE	W		
	24	28	13	17	17	15	9	13	20	19	20	15	17	22	13	13	11	6	7	6	0	0	11	15	35	9	29
30	ESE	ESE	E	E	E	E	E	E	ESE	E	E	ESE	SE	SE	SSE	SSE	SSE	SSE	S	SW	SW	SW	SW	SW	WSW		
	11	15	13	15	11	13	15	13	20	19	24	30	35	28	30	31	24	24	19	26	31	33	24	33	54	23	30
31	SW	WSW	WSW	WSW	WSW	WSW	W	W	WSW	WSW	WSW	SW	SW	SW	WSW	WSW	WSW	W	W	WSW	WSW	WSW	WSW	WSW	WSW		
	26	28	37	19	24	24	35	30	26	28	28	24	39	33	33	33	43	20	30	31	28	28	30	26	61	16	31

Avis/Note C= Calme /Calm M= Manquant /Missing

Points de rosée horaires
Hourly dew points

Montreal - Dorval (AUTO)

Octobre 1996
October 1996

DATE	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	67	68	70	71	75	68	75	68	76	79	89	91	101	116	127	138	140	143	139	134	133	133	131	131
2	125	125	125	123	124	122	120	121	124	131	131	130	137	156	144	137	132	140	142	139	137	137	140	105
3	93	42	25	23	19	7	3	-1	-16	-16	-19	-21	-33	-29	-28	-29	-32	-38	-34	-32	-28	-32	-31	-32
4	-27	-21	-25	-29	-20	-26	-30	-5	0	-19	-26	-31	-24	-35	-33	-34	-38	-37	-26	-19	-22	-27	-25	-35
5	-23	-40	-26	-17	-20	-29	-48	-23	10	12	8	-8	4	7	-3	-10	-1	-1	-5	-12	-12	-11	11	6
6	9	11	7	1	-3	-6	8	26	25	31	39	44	48	48	51	58	71	62	60	57	55	55	52	53
7	46	43	52	51	53	56	61	68	72	76	82	91	92	95	99	111	115	108	111	110	105	109	120	119
8	113	113	122	124	124	114	112	96	83	76	72	75	80	80	81	80	79	79	79	79	81	86	88	87
9	85	80	81	82	85	85	84	85	90	97	98	97	100	95	99	101	101	99	105	101	101	100	98	97
10	98	98	100	100	101	98	102	102	104	92	85	80	72	54	54	50	51	54	49	42	30	22	7	-3
11	-28	-22	-21	-23	-33	-39	-44	-27	-31	-42	-51	-46	-38	-46	-35	-41	-36	-33	-32	-23	-14	-15	7	7
12	7	-9	-1	-3	3	8	15	23	24	34	48	40	44	56	49	51	64	73	75	80	78	76	77	78
13	79	78	76	77	74	78	80	81	80	84	86	88	93	101	99	100	100	97	106	99	108	119	126	123
14	122	121	123	123	115	64	41	29	38	19	27	16	12	0	-9	-23	-34	-48	-57	-60	-61	-76	-70	-71
15	-76	-77	-79	-86	-83	-79	-87	-78	-77	-77	-75	-74	-71	-70	-75	-72	-79	-62	-67	-55	-48	-49	-41	-32
16	-21	1	-7	-8	-22	-11	3	-1	1	9	18	29	43	53	63	67	72	77	80	86	79	80	78	40
17	20	16	15	15	13	4	-3	-1	-4	-4	-16	-36	-39	-38	-46	-45	-47	-47	-44	-45	-48	-41	-45	-48
18	-46	-40	-37	-38	-35	-35	-35	-32	-30	-27	-25	-15	-9	5	18	69	78	79	65	50	46	42	40	38
19	36	37	31	29	13	24	17	14	15	18	15	22	17	16	14	15	23	37	22	32	29	29	30	28
20	28	29	30	30	25	23	21	21	21	24	23	24	16	30	15	10	4	23	45	53	44	47	50	53
21	51	53	50	52	49	51	48	49	50	51	51	50	52	56	59	61	61	60	62	64	65	68	65	66
22	63	62	62	61	61	63	64	64	67	71	76	84	84	86	85	86	86	84	81	79	79	71	81	75
23	74	75	74	73	72	73	75	76	75	81	79	78	76	66	75	72	72	71	79	80	83	91	96	100
24	105	92	78	76	78	76	83	76	75	64	65	54	46	52	51	59	60	69	68	69	79	87	92	90
25	90	85	75	75	69	58	49	53	55	53	50	47	51	45	39	40	41	39	39	36	31	22	34	34
26	21	19	25	30	26	15	13	37	60	63	43	59	62	65	64	61	65	64	57	49	61	61	57	51
27	45	44	43	39	32	27	22	20	24	27	32	47	54	56	66	74	75	77	80	83	76	78	76	88
28	91	137	134	131	133	126	85	77	74	72	67	64	52	29	8	7	-10	-4	18	-6	1	-4	-7	-27
29	-25	-28	-25	-17	-17	-19	-20	-21	-9	-13	-15	-17	-27	-26	-28	-32	-33	-37	-30	-28	-23	-30	-16	-12
30	-15	-18	-20	-16	-9	-15	-14	-13	3	21	21	35	48	54	52	58	69	74	80	100	92	90	87	82
31	79	65	50	48	43	36	27	19	13	-2	7	-28	-24	-25	-32	-31	-56	-32	-48	-52	-63	-61	-70	-61

Unités / Units: 0.1 °C

M = Manquant / Missing

Humidités relatives horaires
Hourly relative humidities

Montreal - Dorval (AUTO)

Octobre 1996
October 1996

DATE	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	88	89	87	90	87	83	86	79	77	75	74	70	62	58	59	60	60	67	76	82	86	87	91	87
2	91	91	92	92	91	88	84	83	78	76	74	74	77	82	74	72	72	81	80	77	83	80	80	88
3	95	83	80	82	84	81	81	76	67	64	61	59	52	53	55	50	53	52	57	72	71	80	80	78
4	81	83	86	88	88	91	90	91	78	61	53	49	49	44	47	46	45	52	69	73	75	70	82	87
5	85	87	91	92	87	91	93	94	84	74	64	52	55	52	48	44	47	53	60	54	53	67	72	82
6	80	82	78	75	73	78	82	80	70	59	56	53	49	46	46	49	55	59	65	67	69	73	79	77
7	79	82	85	84	89	87	88	85	79	73	68	63	56	55	56	58	63	64	76	66	74	78	78	87
8	92	92	96	96	96	92	93	89	81	79	77	76	72	72	73	73	74	79	80	82	85	90	90	91
9	92	90	90	92	92	93	96	95	90	85	79	79	82	82	84	89	88	90	97	96	96	95	94	93
10	96	96	97	97	97	98	99	95	99	98	98	97	93	90	91	89	91	95	91	89	86	83	78	78
11	68	74	79	85	86	89	91	88	70	59	52	48	50	46	48	46	48	53	61	62	64	63	74	77
12	80	85	87	88	88	89	88	92	80	76	72	65	65	62	61	63	76	91	91	93	94	93	90	92
13	92	90	87	92	86	89	89	89	87	89	87	89	87	92	88	83	80	87	87	90	84	87	92	93
14	89	80	79	82	83	75	70	68	70	62	63	57	56	51	47	45	45	46	46	48	52	47	53	53
15	57	68	62	58	62	64	60	62	56	51	48	44	41	38	35	35	36	42	41	46	50	48	51	56
16	60	67	67	66	58	65	73	67	64	64	64	60	58	59	59	59	62	71	76	78	80	82	89	80
17	75	75	78	78	80	78	75	75	71	69	59	48	46	43	40	39	39	42	44	46	46	50	49	48
18	47	50	53	57	62	64	65	68	66	58	53	49	44	43	43	60	64	65	59	59	63	61	62	64
19	64	65	63	66	62	76	75	75	68	60	51	51	45	41	40	39	43	57	49	57	58	61	63	65
20	67	69	74	75	73	73	72	72	70	69	63	60	55	63	51	48	46	55	73	84	74	84	88	91
21	92	95	95	96	95	96	95	96	96	96	97	97	98	99	99	99	97	97	97	98	99	100	99	99
22	98	99	99	99	99	100	99	99	99	99	99	99	99	98	97	95	99	99	98	98	99	100	100	100
23	100	100	100	100	100	100	100	98	95	90	87	81	72	66	66	64	65	65	72	74	74	81	84	84
24	94	93	89	95	95	99	99	88	86	76	73	67	62	65	68	73	75	79	79	77	84	89	90	86
25	86	83	79	80	77	74	72	74	74	71	68	66	69	65	62	61	64	66	65	66	73	79	76	85
26	89	90	92	94	89	93	99	100	97	87	67	69	67	63	61	60	64	71	79	88	83	91	90	93
27	91	93	94	93	92	89	81	80	80	74	65	65	61	57	58	59	60	65	74	77	80	84	83	91
28	98	90	90	92	89	86	70	72	71	69	68	67	56	58	47	52	45	49	60	55	60	63	63	52
29	55	57	66	69	68	70	77	78	66	59	54	53	45	42	40	40	42	48	59	61	57	65	59	66
30	69	65	66	70	73	68	69	66	76	87	85	89	88	90	86	94	99	99	97	97	94	85	83	85
31	84	79	74	85	82	81	78	78	75	65	67	51	49	45	47	52	45	65	59	59	56	57	50	57

Unités: pourcent (%) /Units: percent (%)

Environnement Canada Direction de l'environnement atmosphérique

Environment Canada Atmospheric Environment Branch

SOMMAIRE MÉTÉOROLOGIQUE MENSUEL
MONTHLY METEOROLOGICAL SUMMARY

Montreal - Dorval (AUTO)

Novembre 1996

November 1996

LAT 45' 28N LONG 73' 45W ALTITUDE 36 METRES (NMM) ÉLÉVATION 36 METRES (ASL) HEURE NORMALE UTILISÉE DE L'EST STANDARD TIME USED Eastern

DATE	TEMPÉRATURE / TEMPERATURE MAXIMALE / MAXIMUM °C	MINIMALE / MINIMUM °C	MOYENNE / MEAN °C	DEGRÉS-JOURS / DEGREE-DAYS DE CHAUFFE / HEATING Base 18 °C	DE CROISSANCE / GROWING Base 5 °C	DE REFROIDISSEMENT / COOLING Base 18 °C	HUMIDITÉ REL. / REL. HUMIDITY MAXIMALE / MAXIMUM %	MINIMALE / MINIMUM %	GRANDE TEMPÊTE/STORM	PRÉCIPITATIONS / PRECIPITATION PLUIE (MM)/RAINFALL	NEIGE (CM)/SNOWFALL	PRÉCIP. TOTAL / TOTAL PRECIP. mm	NEIGE AU SOL / SNOW ON GROUND cm	VENTS / WINDS VITESSE MOYENNE / AVERAGE SPEED km/h	DIRECTION DOMINANTE / PREVAILING DIRECTION	VITESSE MAXIMUM / MAX 2 MIN MEAN SPEED & DIRECTION km/h	DIRECTION	MAX 2 MIN MEAN	INSOLATION EFFECTIVE / BRIGHT SUNSHINE HEURES / HOURS
1	5.8	0.7	3.3	14.7			66	47			TR	TR		22.9	WSW*	WSW	39		0.9
2	3.7	-4.6	-0.5	18.5			92	44			TR	TR	TR	17.3	W	SW*	26		[illegible]
3	2.9	-4.2	-0.7	18.7			83	51						17.2	W	WSW*	30		2.9
4	9.1	-1.8	3.7	14.3			82	54						18.4	WSW	SW	31		0.3
5	7.5	1.4	4.5	13.5			83	55			TR	TR		14.9	NE	NE	24		
6	11.0	0.8	5.9	12.1	0.9		87	63		TR		TR		11.1	NNE	ESE*	17		2.2
7	16.9	7.4	12.2	5.8	7.2		96	78		0.5		0.5		25.7	SE	SE	33		
8	19.8	10.1	15.0	3.0	10.0		100	78		93.5		93.5		9.5	S	SSE	19		
9	11.9	1.8	6.9	11.1	1.9		100	82		40.5		40.5		18.5	SW	WSW*	37		
10	6.8	-0.2	3.3	14.7			95	68		0.5		0.5		11.7	NNE	SSW*	24		0.9
11	3.9	-4.5	-0.3	18.3			92	70			TR	TR		16.8	W	WSW	30		12.6
12	2.2	-6.7	-2.3	20.3			90	62			0.2	0.4		14.4	W	WSW	28		6.1
13	-1.7	-8.3	-5.0	23.0			93	66			TR	TR	TR	10.1	W	WNW	20		4.9
14	-1.4	-10.5	-6.0	24.0			91	56			TR	TR	TR	7.7	WNW	NNE	22		6.1
15	-3.6	-11.2	-7.4	25.4			78	46					TR	6.8	N	N*	13		8.7
16	1.4	-9.9	-4.3	22.3			88	41					TR	7.5	E	NNE*	13		7.8
17	6.6	-5.3	0.7	17.3			84	35						11.5	NNE	NNE	20		8.3
18	2.6	-2.4	0.1	17.9			100	62		7.0		7.0		5.7	N	NNE*	17		
19	1.5	0.2	0.9	17.1			100	98		3.6	8.0	11.6		8.0	WSW	WSW*	15		
20	1.9	-1.7	0.1	17.9			100	81		TR	0.6	0.6	TR	18.6	WSW	W	28		
21	-0.4	-2.8	-1.6	19.6			91	77			0.6	0.6	TR	19.7	WSW	WSW	30		
22	2.3	-3.9	-0.8	18.8			89	71					TR	16.8	W	W*	28		0.6
23	2.9	-12.1	-4.6	22.6			97	63		2.0	5.0	7.0	TR	21.7	SW	SW	37		
24	-6.9	-14.2	-10.6	28.6			85	63					2.0	5.7	W	WSW*	13		4.6
25	-3.3	-8.6	-6.0	24.0			93	74			1.8	1.0	2.0	5.0	N	WSW	9		1.9
26	-1.6	-4.8	-3.2	21.2			92	61			0.6	0.6	3.0	16.1	N*	N	24		
27	-3.3	-9.7	-6.5	24.5			71	51					3.0	14.1	N	N	22		7.3
28	-3.5	-10.9	-7.2	25.2			95	68			TR	TR	3.0	10.7	WSW	SW*	15		3.5
29	-0.4	-7.1	-3.8	21.8			96	82			TR	TR	3.0	7.2	WSW	SW	15		1.3
30	3.2	-0.6	1.3	16.7			92	74		TR	TR	TR	2.0	15.5	SE	SSE*	22		0.4
	MOY. MEAN 3.3	MOY. MEAN -4.1	MOY. MEAN -0.4	TOTAL 552.9	TOTAL 20.0	TOTAL	MOY. MEAN 90	MOY. MEAN 64	TOTAL	TOTAL 147.6	TOTAL 16.8	TOTAL 163.8		MOY. MEAN 13.6	DOMINANTE PREVAILING WSW	MAXIMUM WSW	39		TOTAL 87.7
NORMALE NORMAL	5.2	-2.0	1.6	492.3	22.4					70.4	24.1	93.4		16.0	W				84.2

SOMMAIRE DE DEGRÉS-JOURS/DEGREE-DAY SUMMARY

	ANNÉE EN COURS THIS YEAR	ANNÉE PRÉCÉDENTE PREVIOUS YEAR	NORMALE NORMAL		ANNÉE EN COURS THIS YEAR	ANNÉE PRÉCÉDENTE PREVIOUS YEAR	NORMALE NORMAL
AU-DESSOUS DE 18°C BELOW 18°C				AU-DESSUS DE 5°C ABOVE 5°C			
TOTAL DU MOIS TOTAL FOR MONTH	552.9	569.5	492.3	TOTAL DU MOIS TOTAL FOR MONTH	20.0	10.4	22.4
ACCUMULÉS DEPUIS LE 1ER JUILLET ACCUMULATED SINCE JULY 1	951.0	936.0	946.8	ACCUMULÉS DEPUIS LE 1ER AVRIL ACCUMULATED SINCE APRIL 1	2096.9	2216.6	2070.9

JOURS AVEC PRÉCIPITATIONS TOTALES / DAYS WITH TOTAL PRECIPITATION (mm)

0.1 OU PLUS OR MORE	1.0 OU PLUS OR MORE	5.0 OU PLUS OR MORE	10.0 OU PLUS OR MORE	25.0 OU PLUS OR MORE
11	6	5	3	1

JOURS AVEC CHUTES DE NEIGE / DAYS WITH SNOWFALL (cm)

0.1 OU PLUS OR MORE	1.0 OU PLUS OR MORE	5.0 OU PLUS OR MORE	10.0 OU PLUS OR MORE	25.0 OU PLUS OR MORE
7	3	2		

Données non contrôlées/Data not validated

Les précipitations ont un seuil mesurable de 1.0 mm

Measurable threshold of precipitation is 1.0 mm

Canada

1. Journée climatologique/Climatological Day
2. Normale/Normal 1961-1990
3. TR=Trace
4. M=Manquante/Missing E=Estimé/Estimated
5. Pas de valeur/No entry=Pas d'événement/No occurence
6. C=Calme/Calm

RELEVES COMPARATIFS À:
COMPARATIVE RECORDS AT:

Montreal - Dorval (AUTO)

Novembre 1996
November 1996

		CE MOIS-CI THIS MONTH		ANNÉE PRÉCÉDENTE PREVIOUS YEAR		NORMALE NORMAL	RECORD POUR LE MOIS RECORD FOR THE MONTH						
							MAXIMUM ABSOLU HIGHEST EVER			MINIMUM ABSOLU LOWEST EVER			NB. D'ANNÉES NO OF YEARS
		RELEVÉ VALUE	JOUR DAY	RELEVÉ VALUE	JOUR DAY		RELEVÉ VALUE	JOUR DAY	ANNÉE YEAR	RELEVÉ VALUE	JOUR DAY	ANNÉE YEAR	
TEMPERATURE MAXIMALE HIGHEST TEMPERATURE (MAXIMUM)	°CELSIUS	19.8	8	17.1	11		21.7	6	1948				55
TEMPERATURE MINIMALE LOWEST TEMPERATURE (MINIMUM)	°CELSIUS	-14.2	24	-17.4	30					-19.4	27	1949	55
TEMPERATURE MENSUELLE MOYENNE MEAN MONTHLY TEMPERATURE	°CELSIUS	-0.4		-1.0		1.6	5.8		1948	-0.6		1989	54
HAUTEUR TOTALE MENSUELLE DE PLUIE TOTAL MONTHLY RAINFALL	Millimètres (mm) Millimetres (mm)	147.6		89.1		70.4	142.6		1989	19.1		1956	54
HAUTEUR TOTALE MENSUELLE DE NEIGE TOTAL MONTHLY SNOWFALL	centimètres (cm) centimetres (cm)	16.8		48.1		24.1	69.1		1983	0.0		1957	54
PRECIPITATION TOTALE MENSUELLE TOTAL MONTHLY PRECIPITATION	Millimètres (mm) Millimetres (mm)	163.8		136.7		93.4	175.8		1989	31.5		1991	55
NOMBRE DE JOURS AVEC PRECIPITATION MESURABLE NO OF DAYS WITH MEASURABLE PRECIPITATION		12		17		15	22		1989	9		1962	54
HAUTEUR DE PLUIE MAXIMALE EN UNE JOURNÉE GREATEST RAINFALL IN ONE DAY	Millimètres (mm) Millimetres (mm)	93.5	8	34.0	2		55.6	1	1994				54
HAUTEUR DE NEIGE MAXIMALE EN UNE JOURNÉE GREATEST SNOWFALL IN ONE DAY	centimètres (cm) centimetres (cm)	8.0	19	17.0	27		30.5	30	1944				54
PRECIPITATION MAXIMALE EN UNE JOURNÉE GREATEST PRECIPITATION IN ONE DAY	Millimètres (mm) Millimetres (mm)	93.5	8	34.0	2		55.6	1	1994				54
HAUTEUR DE PLUIE ENREGISTREE EN: MAXIMUM RAINFALL RECORDED IN:													
5 MINUTES	Millimètres (mm) Millimetres (mm)						3.8	22	1953				49
10 MINUTES	Millimètres (mm) Millimetres (mm)						4.9	6	1988				49
15 MINUTES	Millimètres (mm) Millimetres (mm)						7.6	22	1983				49
30 MINUTES	Millimètres (mm) Millimetres (mm)						11.3	16	1989				49
60 MINUTES	Millimètres (mm) Millimetres (mm)						13.8	16	1989				49
24 HEURES CONSECUTIVES CONSECUTIVE HOURS	Millimètres (mm) Millimetres (mm)												
VITESSE MOYENNE DU VENT (km/h) MEAN WIND SPEED (km/h)		13.6		16.6		16.0	21.4		1958	11.8		1974	43
VITESSE MAXIMALE (MOYENNE SUR 2 MIN.) (km/h) MAXIMUM SPEED (2 MIN. MEAN) (km/h)		WSW 39	1	SSE 44	11		WSW 76	10	1975				43
POINTE DU VENT MAXIMALE (km/h) MAXIMUM GUST SPEED (km/h)		SW 56	9	S 65	11		S 113	16	1989				38
TOTAL DES HEURES INSOLATION TOTAL HOURS OF SUNSHINE		87.7		64.3		84.2	144.3		1978	62.4		1972	24
PRESSION MOYENNE À LA STATION (kPa) MEAN STATION PRESSURE (kPa)		101.60		101.07		101.18	101.71		1985	100.59		1976	42
PRESSION MAXIMALE À LA STATION (kPa) GREATEST STATION PRESSURE (kPa)		104.23	15	102.80	1		103.94	30	1993				42
PRESSION MINIMALE À LA STATION (kPa) LEAST STATION PRESSURE (kPa)		99.10	9	98.51	12					96.53	30	1963	42

DONNÉES CLIMATOLOGIQUES CE MOIS-CI POUR LES 10 DERNIÈRES ANNÉES
CLIMATOLOGICAL DATA THIS MONTH FOR THE PAST 10 YEARS

ANNÉE YEAR	TEMP MAXIMALE MAXIMUM TEMP	TEMP MINIMALE MINIMUM TEMP	TEMP MOYENNE MEAN TEMP	HAUTEUR DE PLUIE RAINFALL	HAUTEUR DE NEIGE SNOWFALL	PRECIP TOTALE TOTAL PRECIP	VITESSE MOYENNE DES VENTS MEAN WIND SPEED	VITESSE MAXIMALE DES VENTS MEAN WIND SPEED	HEURES INSOLATION SUNSHINE HOURS	DEGRÉS-JOURS DE CHAUFFE HEATING DEGREE-DAYS	DEGRÉS-JOURS DE CROISSANCE GROWING DEGREE-DAYS	DEGRÉS-JOURS DE REFROIDISSEMENT COOLING DEGREE-DAYS	A.E.H. S.A.S.
1987	18.0	-14.4	0.9	86.3	29.4	115.9	14.2	WSW 41	86.[illegible]	514.1	18.4		29.8
1988	19.0	-7.9	3.2	92.6	24.8	117.8	15.2	WSW 48	74.7	445.5	28.9		47.2
1989	19.7	-15.9	-0.6	142.6	37.2	175.8	17.2	SW 56	73.8	556.7	19.3		43.0
1990	19.2	-7.4	2.5	70.9	16.4	86.9	14.7	WSW 48	84.0	464.8	35.4		16.4
1991	18.2	-9.0	2.5	22.0	7.3	31.5	14.9	SW 52	79.4	466.0	25.2		7.3
1992	13.8	-10.9	1.5	89.9	13.8	100.2	14.4	SW 69	78.7	495.1	12.7		14.2
1993	14.0	-14.1	1.3	79.6	18.6	98.2	15.4	SW 52	84.2	502.3	9.5		19.4
1994	18.0	-10.7	3.7	105.8	13.6	118.8	16.8	WSW 59	122.6	429.5	42.0		13.6
1995	17.1	-17.4	-1.0	89.1	48.1	136.7	16.6	SSE 44	64.3	569.5	10.4		48.1
1996	19.8	-14.2	-0.4	147.6	16.8	163.8	13.6	WSW 39	87.7	552.9	20.0		16.8

AMS/NOTE

Température horaire
Hourly temperature

Montreal - Dorval (AUTO)

Novembre 1996
November 1996

DATE	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	2
1	15	23	18	18	13	14	17	24	35	37	43	51	55	57	55	55	57	42	35	37	39	38	24	1
2	16	13	17	19	16	13	7	-1	3	14	18	26	31	29	21	24	17	1	-13	-21	-30	-27	-26	-
3	-32	-18	-27	-32	-41	-36	-40	-34	-29	-25	-13	1	12	8	13	16	1	2	-3	5	-17	-36	-39	-
4	-5	-5	-1	3	-12	-16	-6	23	28	M	42	53	61	70	69	72	83	84	87	90	88	82	81	8
5	76	71	67	49	49	34	26	18	15	16	20	22	24	29	33	34	34	30	30	30	31	29	25	2
6	29	26	23	24	10	15	17	20	27	37	48	62	81	91	106	107	107	100	91	84	82	86	76	7
7	79	74	87	92	95	98	102	96	98	104	107	105	112	119	125	130	135	141	144	148	152	159	163	1
8	164	166	168	179	182	174	148	142	147	146	147	146	147	149	143	141	128	125	126	121	117	109	106	1
9	106	113	117	117	116	114	114	115	91	72	67	63	57	51	53	51	52	51	47	44	33	23	44	3
10	27	37	26	27	22	27	11	14	18	33	43	44	46	52	57	62	48	38	45	36	48	43	37	2
11	25	20	19	20	19	19	15	11	11	21	22	26	31	25	33	32	31	-5	-6	-7	-16	-28	-27	-
12	-37	-44	-39	-46	-37	-38	-51	-51	-28	-13	-6	0	11	13	8	0	-18	-20	-26	-28	-26	-31	-44	-
13	-53	-62	-65	-78	-66	-73	-75	-83	-64	-49	-31	-34	-38	-25	-28	-39	-47	-68	-70	-70	-72	-72	-77	-
14	-71	-70	-71	-88	-88	-103	-85	-96	-74	-50	-40	-37	-24	-28	-19	-24	-37	-65	-61	-66	-64	-57	-64	-
15	-84	-88	-93	-100	-102	-106	-111	-112	-100	-89	-77	-72	-59	-52	-47	-43	-48	-64	-66	-76	-66	-67	-70	-
16	-73	-75	-70	-71	-67	-88	-77	-77	-66	-45	-30	-14	-4	4	12	9	8	-1	-5	-9	-21	-28	-26	-
17	-34	-38	-39	-49	-48	-48	-49	-47	-32	-11	11	26	44	58	61	64	56	47	35	27	3	5	7	1
18	-11	-7	-8	-7	-2	-8	-19	-16	0	6	10	17	19	19	24	25	22	22	17	16	15	14	14	1
19	14	13	11	11	14	10	6	5	9	9	9	6	11	11	7	4	2	2	8	9	11	11	11	9
20	7	8	9	8	6	4	2	1	0	2	4	7	14	17	M	13	8	3	3	6	-5	-7	-9	-1
21	-14	-16	-17	-18	-21	-24	-26	-28	-28	-24	-20	-15	-16	-15	-9	-9	-8	-8	-7	-6	-6	-6	-6	-
22	-10	-11	-9	-4	-16	-24	-26	-13	-6	-1	6	11	17	16	12	12	14	14	12	11	2	1	-11	-2
23	-33	-24	-36	-36	-39	-35	-17	-21	-6	2	8	17	27	23	19	17	14	11	-6	-20	-37	-57	-76	-9
24	-111	-116	-121	-125	-135	-127	-135	-137	-131	-118	-107	-84	-81	-81	-75	-82	-83	-84	-81	-79	-77	-74	-71	-7
25	-71	-71	-70	-69	-66	-61	-61	-66	-64	-59	-55	-52	-46	-43	-34	-37	-53	-75	-79	-81	-68	-62	-58	-9
26	-53	-48	-47	-45	-46	-42	-44	-43	-39	-40	-41	-39	-35	-34	-29	-23	-20	-24	-17	-28	-32	-39	-40	-4
27	-44	-46	-51	-57	-70	-70	-73	-78	-76	-64	-57	-49	-40	-39	-35	-48	-37	-42	-43	-53	-49	-48	-44	-4
28	-47	-47	-81	-83	-96	-96	-104	-105	-86	-65	-57	-51	-42	-37	-37	-38	-43	-47	-40	-49	-55	-43	-41	-4
29	-62	-61	-54	-64	-49	-48	-43	-56	-52	-39	-30	-28	-26	-22	-19	-18	-16	-16	-17	-13	-13	-14	-17	-
30	-9	-5	-2	1	3	2	3	3	6	7	13	21	23	22	23	24	23	23	23	26	28	27	26	2

Unités / Units: 0.1 °C M = Manquant /Missing

Lire / Read -123 = -12.3 °C -1 = -0.1 °C 0 = 0.0 °C 12 = +1.2 °C 123 = +12.3 °C

Heure normale locale: Est

Local standard time: Eastern

Vents horaires (km/h)
Hourly winds (km/h)

Montreal - Dorval (AUTO)

Novembre 1996
November 1996

Heure normale locale: Est
Local standard time : Eastern

DATE	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Rafale max Peak Gust	Heure Time	Jour Day
1	WSW 26	WSW 30	WSW 24	WSW 31	WSW 24	SW 22	WSW 22	SW 22	SW 22	WSW 39	WSW 24	WSW 24	WSW 30	SW 24	SW 28	SW 31	SW 26	WSW 20	WSW 13	SW 17	SW 20	WSW 17	WSW 19	SW 19	SW 50	9	1
2	SW 17	SW 15	SW 19	SSW 19	WSW 19	SW 26	WSW 26	WSW 19	WSW 17	WSW 24	W 17	WSW 19	W 20	SW 26	W 17	SW 22	W 22	W 17	W 11	WNW 9	WNW 9	W 6	WNW 9	W 11	WSW 37	2	2
3	W 13	W 19	W 17	W 17	W 15	W 19	WSW 19	SW 17	WSW 28	WSW 30	WSW 26	WSW 20	WSW 30	W 24	W 24	W 30	WNW 17	WNW 11	W 4	W 13	WSW 9	W 9	WNW 7	SW 9	WSW 41	12	3
4	WSW 11	WSW 6	WSW 9	WSW 11	W 6	S 6	WSW 11	SSW 20	SSW 19	M	SW 26	SSW 19	SSW 22	SW 20	SSW 17	S 15	SW 20	SW 20	SW 26	SW 31	WSW 30	WSW 24	WSW 24	WSW 24	WSW 46	20	4
5	W 13	W 11	W 9	NW 7	NNE 13	NNE 15	NNE 22	NNE 20	NE 24	NE 17	NE 20	NE 13	NE 15	NE 17	NE 11	NE 13	NE 13	NE 11	NE 13	NE 13	NE 19	NNE 20	NNE 15	N 15	NE 31	9	5
6	NNE 11	NNE 11	N 13	NNE 13	NNE 9	NNE 11	NNE 13	NNE 15	NNE 13	NNE 13	NE 11	ENE 6	E 7	E 11	ESE 17	ESE 13	ENE 6	NE 9	NE 11	NE 17	NNE 11	NE 13	N 11	NE 9			
7	NNE 7	NE 7	SE 7	SE 17	SE 22	SE 20	SE 24	SE 26	SE 30	SE 28	SE 30	SE 30	SE 31	SE 33	SE 28	SE 24	SE 28	SE 28	SSE 30	SSE 26	SSE 28	SE 30	SE 26	SE 26	SE 44	13	7
8	SSE 24	SE 20	SSE 15	SE 17	SSE 19	SW 17	S 15	SSE 11	S 9	S 11	SE 9	SE 15	SSE 4	SE 7	SSW 9	SW 11	NE 6	C 0	S 6	WSW 9	SW 6	S 4	S 11	C 0	SSE 35	5	8
9	ENE 7	NE 11	W 9	NE 19	NNE 15	NNE 15	NNE 19	E 4	SW 26	SSW 24	SW 24	SW 28	WSW 26	WSW 37	WSW 35	SW 37	WSW 24	SW 28	WSW 17	SW 19	WSW 13	C 0	SW 13	SSE 6	SW 56	15	9
10	S 7	C 0	ESE 4	E 7	NE 7	NNE 9	NE 6	NNE 9	NNE 11	NNE 17	NNE 13	NE 19	NE 11	E 7	ESE 6	WSW 6	W 6	W 6	C 0	SSE 4	SW 22	SW 22	SSW 24	SSW 24	SSW 37	23	10
11	SW 19	WSW 22	WSW 30	SW 24	WSW 24	WSW 28	WSW 26	WSW 24	WSW 24	W 20	WSW 24	WSW 15	SW 20	W 17	W 11	W 13	WSW 15	W 6	W 9	W 11	W 11	W 11	W 11	SW 7	WSW 39	4	11
12	WSW 11	W 11	W 9	W 11	WNW 13	WNW 13	WNW 11	NW 11	WNW 11	WNW 13	WNW 9	W 9	WSW 15	WSW 17	WSW 28	W 24	WSW 26	W 13	NW 15	W 9	WNW 17	W 15	W 15	W 15	WSW 31	14	12
13	W 13	W 13	W 11	W 11	W 11	W 9	WNW 11	W 6	WSW 4	W 11	SW 13	W 15	WSW 15	SW 19	W 19	WNW 20	WSW 9	W 7	W 9	WNW 7	W 7	W 6	W 6	NNW 4			
14	NNW 6	NNE 6	C 0	C 0	C 0	NW 4	C 0	C 0	N 7	C 0	C 0	WNW 9	W 6	WNW 9	W 11	W 13	WNW 9	WNW 7	NW 7	NNW 9	NNW 11	N 13	NNE 17	NNE 22			
15	N 13	NNE 17	N 13	N 11	N 13	N 9	N 9	NNE 7	N 9	N 13	C 0	N 7	WNW 4	NNE 4	E 4	WNW 4	WSW 4	W 4	WNW 4	NW 7	E 4	SE 6	ESE 7	SE 6			
16	ESE 7	E 6	E 7	E 6	E 7	E 4	E 7	E 6	E 7	E 7	E 9	ENE 6	E 6	C 0	ESE 11	ESE 9	E 7	ENE 4	E 7	E 9	NNE 9	NNE 7	NNE 9	NNE 13			
17	NNE 9	NNE 13	NNE 9	N 9	N 11	NNE 11	NNE 11	NNE 11	NNE 7	NE 11	NNE 11	N 9	NE 9	NE 13	NE 11	NE 11	NE 11	NE 13	NE 11	NNE 11	N 11	NNE 15	NNE 17	NNE 20			
18	N 9	NNE 15	NNE 17	N 15	NNE 17	NNE 7	N 7	N 7	NNE 11	NNW 7	N 7	N 6	NW 4	NW 6	NE 4	N 4	C 0	C 0	W 4	C 0	NW 4	WSW 6	W 4	C 0			
19	C 0	C 0	NNW 6	N 6	N 7	W 6	NW 6	NW 6	NNW 6	N 7	N 6	WNW 7	NW 6	WNW 6	W 6	W 4	WSW 4	C 0	SW 7	WSW 11	WSW 15	WSW 15	WSW 15	WSW 13			
20	WSW 13	WSW 13	WSW 15	WSW 11	WSW 13	WSW 17	WSW 17	WSW 19	WSW 17	SW 15	WSW 17	SW 19	WSW 17	WSW 19	M	W 19	W 22	W 20	W 19	W 28	W 20	W 22	W 22	WSW 20	W 39	19	20
21	W 20	W 20	W 24	WSW 19	WSW 19	W 22	WSW 20	WSW 20	WSW 19	WSW 19	WSW 30	WSW 24	WSW 26	WSW 26	WSW 26	WSW 22	W 20	W 17	W 19	W 20	W 17	W 17	W 13	WSW 11	WSW 37	11	21
22	SW 9	WSW 13	WSW 13	W 15	W 11	W 11	W 13	W 15	W 11	W 13	W 17	W 17	W 20	W 26	W 28	W 19	W 24	W 17	W 20	W 19	W 15	W 28	W 17	W 11	W 35	15	22
23	WSW 11	SW 11	WSW 11	WSW 13	WSW 11	SW 6	SSW 17	SSW 19	SSW 22	SW 31	SSW 19	SSW 22	SW 28	SW 37	SW 33	SW 28	SW 31	SW 26	WNW 20	NW 30	NW 30	NW 28	NW 26	NW 15	SW 50	13	23
24	NNW 11	NNW 7	NW 7	NNW 7	WNW 7	N 7	NNW 6	N 6	C 0	N 4	C 0	C 0	WSW 13	SW 13	SW 7	W 9	W 7	W 9	WSW 7	WSW 11	W 6	W 4	C 0	WSW 6			
25	C 0	C 0	N 4	N 4	N 4	ENE 4	NNW 6	N 7	N 4	N 6	N 6	NNW 6	C 0	WSW 4	SW 4	SW 7	WSW 6	WSW 9	W 7	W 6	WSW 6	C 0	E 4	N 4			
26	SSE 4	SE 7	E 6	N 7	NNE 13	NNE 9	NNE 15	NNE 15	NE 19	NNE 19	N 19	NNE 22	NNE 20	NNE 20	N 19	N 13	NNE 7	WNW 9	N 17	N 24	N 17	N 20	NNW 19	NNW 17	N 37	19	26
27	NNW 22	N 19	N 22	N 20	N 17	N 15	N 13	N 9	N 11	N 15	N 17	N 17	N 17	WNW 17	WNW 13	NW 13	NW 11	N 19	W 13	W 7	W 11	W 11	WSW 13	W 15	N 39	2	27
28	WSW 11	WSW 11	WSW 11	WSW 9	WSW 9	W 7	WSW 9	WSW 9	WSW 9	SW 13	WSW 11	SW 15	SW 13	SW 11	W 13	WSW 15	WSW 13	WSW 11	WSW 15	WSW 11	WSW 7	WSW 13	WSW 15	WSW 11			
29	WSW 7	C 0	SW 6	WSW 6	W 6	WSW 6	WSW 11	WNW 6	C 0	W 9	SW 15	WSW 9	WSW 7	SW 11	WSW 6	SW 6	SSE 9	SSE 13	SSE 13	C 0	C 0	ESE 7	ESE 7	SE 9			
30	SSE 6	SE 4	SSE 6	SE 9	ESE 9	SE 13	ESE 13	SE 13	ESE 17	SE 13	SE 17	SSE 17	SE 19	SE 20	SE 19	SE 17	SE 19	SE 13	SE 15	SE 20	SSE 17	SSE 13	S 9	SSE 22	SSE 35	20	30

Avis/Note

C= Calme /Calm

M= Manquant /Missing

Points de rosée horaires
Hourly dew points

Montreal - Dorval (AUTO)

Novembre 1996
November 1996

DATE	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	-54	-45	-45	-44	-46	-43	-43	-34	-31	-45	-43	-43	-39	-46	-39	-35	-30	-43	-38	-43	-29	-25	-46	-44
2	-42	-47	-42	-39	-40	-33	-20	-13	-10	-3	-15	-37	-62	-77	-82	-82	-92	-87	-87	-82	-80	-76	-70	-82
3	-72	-65	-63	-62	-69	-72	-65	-62	-61	-61	-58	-57	-58	-62	-67	-75	-76	-74	-65	-61	-63	-67	-67	-52
4	-44	-41	-40	-42	-49	-50	-33	-8	-12	M	-1	3	10	3	-5	-3	12	18	7	3	5	15	20	21
5	24	27	29	23	5	-32	-41	-52	-57	-55	-52	-60	-54	-47	-47	-44	-41	-28	-29	-30	-36	-22	-11	-11
6	-10	-9	-8	-7	-11	-4	-6	-5	-1	4	11	23	34	41	43	39	47	49	45	44	45	44	39	41
7	47	48	56	58	59	63	67	79	83	85	89	99	106	108	110	113	114	118	122	125	129	135	138	136
8	138	140	142	141	143	151	140	140	147	146	147	146	147	149	143	141	128	125	126	121	117	109	106	104
9	106	118	117	117	116	114	114	115	91	72	67	62	53	46	42	31	25	26	25	23	14	8	22	15
10	12	9	6	5	8	11	0	4	10	16	14	9	26	32	37	30	25	13	17	10	-5	-1	-7	11
11	16	13	8	7	3	-3	-6	-11	-10	-3	-14	-10	-11	-18	-16	-18	-18	-18	-23	-32	-41	-51	-53	-47
12	-53	-59	-53	-60	-57	-59	-70	-70	-53	-50	-48	-48	-54	-48	-50	-60	-43	-40	-48	-49	-50	-69	-85	-83
13	-84	-86	-81	-94	-83	-90	-95	-92	-76	-79	-84	-89	-77	-78	-79	-81	-98	-100	-106	-96	-102	-102	-101	-97
14	-102	-101	-98	-108	-106	-115	-100	-110	-87	-77	-72	-85	-90	-86	-90	-99	-102	-101	-97	-100	-108	-111	-116	-126
15	-136	-139	-142	-142	-146	-149	-153	-152	-146	-146	-142	-141	-138	-139	-137	-141	-132	-123	-127	-124	-124	-113	-114	-109
16	-107	-107	-107	-104	-97	-108	-93	-98	-87	-85	-81	-88	-97	-100	-97	-107	-105	-115	-105	-97	-100	-91	-86	-74
17	-72	-70	-67	-71	-72	-72	-74	-74	-67	-65	-66	-63	-61	-65	-82	-65	-76	-62	-65	-66	-65	-88	-81	-67
18	-66	-63	-63	-65	-66	-63	-67	-60	-58	-52	-50	-43	-29	-16	-9	-10	1	0	8	12	12	12	14	14
19	14	13	11	10	14	10	6	5	9	9	9	6	11	11	7	4	2	2	8	9	10	10	8	9
20	7	7	7	8	5	1	0	-3	-4	-2	0	3	9	10	M	-1	-9	-15	-15	-23	-18	-20	-24	-26
21	-25	-27	-34	-37	-38	-36	-41	-44	-47	-45	-47	-45	-46	-44	-37	-30	-28	-34	-41	-41	-38	-37	-36	-33
22	-30	-27	-25	-26	-37	-43	-43	-35	-34	-32	-31	-31	-27	-29	-27	-23	-28	-29	-26	-28	-35	-46	-52	-59
23	-57	-49	-57	-61	-64	-59	-61	-47	-55	-60	-40	-32	-22	-3	8	10	9	7	-10	-24	-70	-103	-120	-136
24	-145	-146	-151	-153	-154	-155	-162	-162	-152	-159	-154	-136	-122	-123	-130	-140	-126	-118	-118	-116	-114	-111	-112	-111
25	-108	-103	-109	-103	-96	-93	-99	-82	-77	-72	-70	-71	-76	-72	-68	-69	-77	-90	-94	-96	-79	-76	-68	-64
26	-66	-62	-58	-56	-61	-59	-59	-64	-64	-59	-56	-57	-51	-53	-55	-55	-56	-56	-63	-91	-94	-94	-93	-97
27	-102	-110	-111	-109	-115	-115	-120	-124	-124	-120	-121	-123	-113	-116	-122	-119	-111	-106	-114	-104	-99	-96	-99	-94
28	-95	-91	-114	-111	-122	-122	-123	-127	-112	-85	-80	-85	-77	-78	-88	-82	-77	-72	-64	-69	-72	-64	-59	-58
29	-69	-68	-66	-75	-55	-57	-53	-66	-60	-51	-56	-55	-50	-48	-41	-38	-34	-34	-35	-28	-31	-32	-37	-28
30	-27	-26	-18	-15	-12	-15	-8	-12	-19	-17	-16	-19	-15	-17	-16	-18	-12	-12	-12	-14	-11	-8	-6	-1

Unités / Units: 0.1 °C

M = Manquant / Missing

Humidités relatives horaires
Hourly relative humidities

Montreal - Dorval (AUTO)

Novembre 1996
November 1996

DATE	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	60	61	63	63	63	66	64	63	62	55	53	51	51	47	51	52	53	54	59	55	61	63	60	66
2	65	64	65	65	66	71	82	92	91	88	79	63	50	45	46	45	44	51	57	63	68	69	72	71
3	74	70	76	80	81	76	83	81	79	76	71	65	59	59	55	51	56	57	63	61	71	79	81	77
4	75	77	75	72	76	78	82	80	75	M	74	70	70	62	59	59	61	63	57	54	56	63	65	66
5	70	74	77	83	73	62	61	60	59	59	59	55	56	57	56	57	58	66	65	65	61	69	77	77
6	75	78	80	80	86	87	85	83	82	79	77	76	72	71	65	63	66	71	73	76	77	75	77	77
7	80	84	81	79	78	79	79	89	90	88	89	96	96	93	91	89	87	86	87	86	86	86	85	84
8	85	85	85	78	78	86	95	99	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
9	100	100	100	100	100	100	100	100	100	100	100	99	97	97	93	87	83	84	86	86	87	90	86	85
10	90	82	87	85	90	89	92	93	94	89	81	78	87	87	87	80	85	84	82	83	68	73	73	89
11	94	95	92	91	89	85	86	85	86	84	77	77	74	73	70	70	70	91	88	83	83	84	82	84
12	89	89	90	90	86	85	86	86	83	76	73	70	62	64	65	64	83	86	85	85	83	75	73	76
13	79	83	88	88	88	88	86	93	91	79	67	66	74	67	68	72	67	78	75	82	79	79	83	78
14	78	78	81	85	87	91	89	89	90	81	78	69	60	64	58	56	61	75	76	77	71	66	66	66
15	66	66	67	71	70	71	71	72	69	63	59	58	53	50	49	46	52	63	62	68	63	70	71	75
16	77	78	75	77	79	85	88	85	85	74	68	57	49	45	44	41	42	42	47	51	55	62	63	73
17	75	78	81	84	83	83	83	81	77	67	56	52	46	41	35	39	38	45	48	50	60	50	52	55
18	66	66	66	65	62	66	70	72	65	65	64	64	70	78	79	78	86	85	94	97	98	99	100	100
19	100	100	100	99	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	99	99	98	100
20	100	99	99	100	99	98	99	97	97	97	97	97	96	95	M	90	88	88	88	81	91	91	90	90
21	92	92	88	87	88	91	89	89	87	85	82	80	80	81	81	86	86	82	78	77	79	79	80	82
22	86	89	89	85	86	87	88	85	81	80	76	73	72	72	75	77	74	73	76	75	76	71	74	79
23	83	83	85	83	83	83	72	82	69	63	70	70	70	83	92	95	96	97	97	97	78	70	71	70
24	76	78	78	79	85	79	80	81	84	71	68	66	72	72	65	63	71	76	75	75	75	75	72	72
25	75	78	74	77	79	78	74	88	90	90	89	86	79	80	77	78	83	89	89	89	92	90	93	93
26	91	90	92	92	89	88	89	85	83	87	89	87	89	87	82	79	76	79	71	62	62	65	66	66
27	64	61	63	67	70	70	69	69	68	64	60	56	57	55	51	57	56	61	58	67	68	69	65	70
28	69	71	77	80	81	81	86	84	81	86	84	77	76	73	68	71	77	83	83	86	88	85	87	89
29	95	95	91	92	96	93	93	93	94	91	82	82	83	82	85	86	87	87	87	89	88	87	86	86
30	88	86	89	89	90	88	92	90	83	84	81	75	76	75	75	74	78	78	78	75	75	78	79	81

Unités: pourcent (%) /Units: percent (%)